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NEW REMEDIES.

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MATERIA MEDICA.

Erythroxylon Coca.

THE accompanying illustration from *The Garden* is a very good representation of the plant which has several times attracted the attention of the medical world, owing to its alleged power of relieving or preventing muscular fatigue, and of taking the place, to some degree, of food. The plant from which the drawing was made is an inhabitant of the Royal Botanic Gardens, Regent's Park, London, where a number of samples exist. So far as can be discovered, it is a very variable plant. In English nurseries it grows in the form of a shrub, three feet to four feet in height. Some of the specimens are much branched, and the leaves differ very much from each other, both in size and shape.

The Coca Plant.—Leaf, natural size, single flower, and ovary enlarged.

The plant is said to be easily cultivated in an ordinary plant-stove, in a compost of fresh fibrous loam, leaf mould, and sand; when growing it requires copious supplies of water at the root, and frequent syringing with tepid water, to keep down insect pests. Cuttings of both stem and root may be employed for purposes of propagation.

There are about seventy species of Erythroxylon, some of which have stimulating qualities, while others furnish a tonic bark somewhat resembling that of cinchona. The bark of one species—E. tuberosum—supplies a reddish dye. The majority of the species are natives of South America and the West Indies, but others are found in Madagascar and the Mauritius. In nearly all the species a distinct pale band runs up the centre of the back of the leaf, as shown in our engraving; indeed, in some descriptions of the leaf of the coca plant, it is stated that two veins, in addition to the mid-rib, run parallel to the margin, as in melastomads.

Articles on the therapeutic uses of the leaf, as well as its history as a masticatory, will be found in the last volume of NEW REMEDIES, but we will add here a synopsis of its effects as determined by Sir Robert Christison, who, during the past year has, with others, made a number of experiments with it, and whose efforts have mainly been the cause of the renewed interest which the drug has awakened. His conclusions are: (1) That, taken in quantities of two drachms by healthy persons, it has no injurious, unpleasant, or suspicious effect whatever; (2) that in very few cases this dose of an inferior sample had no effect at all; (3) that in by far the greater number of instances, and with a fine sample, extreme fatigue was in every case, removed and prevented from returning, and that no doubt can exist that in such persons its restorative and preventive powers will render protracted exercise easy, without any subsequent harm, so far as the restorative is concerned; (4) that it does not in the end impair the appetite or digestion, although hunger, even after long fasting, is taken away for an hour or two; (5) that the use of it does not agree with more than a very moderate use of alcoholic stimulants.

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Asparagin in Sweet Almonds.

MR. L. PORTES, in a paper published in the *Répertoire de Pharmacie* (1876, p. 641), announces the discovery of asparagin in sweet almonds. He noticed a peculiar crystalline crust to form on the outside of peeled almonds placed in absolute alcohol, and made a systematic series of experiments to ascertain the nature of the substance, as follows: 11,380 grammes of sweet almonds were divided into four portions, three of which were blanched, while one was left unblanched. They were then treated in the following manner: 500 grammes were placed into absolute alcohol, another 500 gm. into alcohol of 90 per cent., 250 gm. were placed into ether, and 8,000 gm. (unblanched) were put into alcohol of 90 per cent. At the same time 100 gm. of the skins, or testæ, were macerated in a fifth flask of absolute alcohol.

On the first day nothing particular was noticed in the first flask, but on the second day some crystalline grains, resembling sand, were observed to form on the kernels and the walls of the vessel; two days afterwards these crystals became more numerous and settled to the bottom, while nothing similar was observed in the other vessels until the fifth day, when the same substance began to make its appearance in the second flask, increasing gradually in quantity as in the first. At the end of a week the contents of the fourth flask exhibited the same phenomena, but the crystals were much larger and less numerous. In the third and fifth flask, however, no change was observed, even after the lapse of a month.

It would therefore appear that strong alcohol, on penetrating through fresh, sweet almonds, eliminates from them a crystalline substance, which seems to reside almost exclusively in the cotyledons. It was further ascertained that dilution of the alcohol retards the appearance of the crystals, and that when alcohol of 60 per cent. is employed their formation is entirely prevented. Now, as subsequent examination proved these crystals to be insoluble in strong alcohol, the question arose, how alcohol could extract the substance from the kernels. The author's explanation appears to be the most plausible and rational one. He assumes that as the alcohol gradually makes its way into the interior it encounters and becomes mixed with the natural liquids of the kernel, and by displacing them causes them to pass outwards. This cellular sap, then, encountering a great mass of alcohol as yet unaltered and absolute, becomes mixed therewith, and as the crystallizable matter which the sap contains is insoluble in the menstruum, it becomes slowly deposited in a crystalline form upon the exterior of the kernels and upon the walls and bottom of the vessel.

After the formation of the crystals appears to be completed, if the whole be thrown on a strainer, and the crystalline substance be dissolved out by boiling water, a magnificent crop of crystals, resembling candied sugar, will be obtained on cooling or slightly concentrating the solution.

This substance was found to be but little soluble in cold water; easily soluble in hot water, hot dilute alcohol, ammonia, acids and acid solutions; insoluble in strong alcohol, ether, and fixed oils. These properties, together with its elementary constitution ($C_4H_8N_2O_3$, H_2O), and its crystallographic character prove the substance to be asparagin.

Artificial Coloring of Honey.

MR. CH. MÉNIÈRE, of Angiers, states that the honey which is obtained from Bretagne has a peculiar color and flavor, owing to the admixture of from 10 to 20 per cent. of finely powdered, roasted and dried crumb or rind of bread, and a small quantity of essence of thyme.—*Rép. de Ph.*, 1876, 610.

Adulteration of Arrow-root.

SEVERAL cases of adulteration of arrow-root have been lately tried before English law courts under the Adulteration Act. Some Natal arrow-root, among others, was found on examination to contain one-half its weight of cassava starch.—*Pharm. J. and Trans.*

Peroxide of Hydrogen as a Disinfectant.

THE extraordinary powers of hydrogen peroxide as a disinfecting and oxidizing agent have been known for a long time, but the complicated and tedious method of its preparation has been a bar to its adoption on the large scale. Mr. Charles T. Kingzett, in conjunction with Mr. Zingler, have recently instituted some experiments, based on certain researches on the hygienic influences of the pine and eucalyptus trees,* by which they ascertained that by exposing a mechanical mixture of water and turpentine to a current of air at normal summer temperature, a solution containing hydrogen peroxide, and camphoric acid—the result of splitting up of the turpentine—may be readily obtained. The solution is an aqueous one, containing no oil of turpentine; it appears to be non-poisonous, and is absolutely without harm to textile fabrics. It does not injure carpets or furniture when applied to them, and is slowly but perfectly volatile. It is hoped shortly to produce large quantities on a manufacturing scale, for use in watering roads and streets, and in private houses, hospitals, and other localities where prompt disinfectants are required.—From *Pharm. J. and Trans.*, Dec. 1876, 451.

Chinese Galls.†

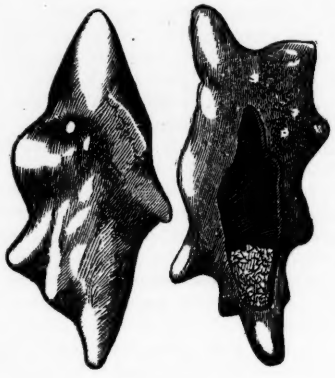
THE plant which bears these curiously-shaped excrescences is *Rhus semialata*, Murray, a small tree of the order Anacardiaceæ, native of Northern India, China, and Japan. This species of galls was mentioned already by Geoffrey as *Oreilles des Indes* in 1724, but soon after seems to have disappeared from the market, until attention was again drawn to them by Pereira in 1844,

* See p. 16.

† After *Flückiger*, Pharmacogr., 539, and *Hager*.

since which time they have been largely exported from China and Japan.

These galls are vesicular protuberances, formed on the leaf-stalks and branches of the above-mentioned tree, by the puncture of an insect provisionally called Aphis Chinensis. The production of the galls is supposed to be as follows, judging from the analogous formations seen in Europe:



According to Doubleday, it is probable that the female aphis punctures the upper surface of the leaf (more probably leaf-stalk), the result of the wound being the growth of a hollow expansion in the vegetable tissue. Of this cavity the creature takes possession, and brings forth a progeny, which lives by puncturing the inner surface of their home, thus much increasing the tendency to a morbid expansion of the soft growing tissue in an outward direction. Meanwhile the neck of the sac-like gall thickens, the aperture contracts, and finally closes, imprisoning all the inmates. Here they live and multiply, until, as in the case of the pistacia gall of Europe, the sac ruptures and allows of their escape. This, we may imagine, takes place at the period when, after some generations all wingless, and perhaps all female,—for the female aphis produces for several generations without impregnation—a winged generation of both sexes is brought forth. These may then fly to other spots, and deposit eggs for a further propagation of their race.

The galls are light and hollow, varying in length from one to two and a half inches, and are of extremely diverse and irregular form. The annexed cut represents an unopened gall, and another open, showing its contents. The body of the gall is generally distorted by numerous knobby or horn-like protuberances or branches. When opened they are found to contain a white, downy-looking substance, together with the minute, dried-up bodies of the insects. Chinese galls contain about seventy per cent. of tannic acid, which is obtained from them much whiter than from Aleppo galls; but it is said that they cannot be successfully used in the manufacture of black ink.

On the Distribution of Cardiac Poisons in the Vegetable Kingdom.*

THE number of plants which have up to the present time been recognized as cardiac poisons is comparatively small and confined to but few natural families; and the number of pure proximate principles obtainable from these plants is nearly equal to the number of plants themselves, as the presence of several principles in one plant appears to be counterbalanced by their absence in others. It is a remarkable fact that all firmly established active principles which affect the heart's action, like digitalis, have been found to be glucosides, with the sole apparent exception of oleander, which is said to contain an alkaloid as active portion. But the chemical history of this plant is by no means fully studied, and it is quite likely that on further investigation the supposed alkaloid will resolve itself into a glucoside.† It is probable that most of these plants contain still other additional proximate principles, acting upon the nervous system in one way or another, as for instance the glucoside digitonin, resembling in its action saponin, in Digitalis; or helleborin, resembling the hypnotic opium-alkaloids, in Helleborus niger and H. viridis, etc. The only exception appears to be *Thevetia neriifolia*,‡ which was recognized as a cardiac poison by Prof. Husemann, and which appears to contain only a single glucoside.

We now turn to the consideration of the various natural families furnishing these poisons, beginning with the dicotyledonous group. The majority of the latter is represented with a solitary genus, or even species, while only one family, the Apocynaceæ, furnishes several representatives. The importance of the latter family will justify us in placing it at the head, especially as it is highly probable that other members of it, as yet unstudied, will be found to possess similar properties. In the following notes only such points are mentioned or touched upon as are not generally found in the usual works on phytochemistry and pharmacodynamics, it being supposed that the latter works will be consulted for further information.§

1. APOCYNACEÆ.

The oldest known cardiac poison belonging to this family is *Tanghinia venenifera*, Poiret (*T. Madagascariensis*, Pet. Th.; *Cerbera Tanghin*, Hooker), native of Madagascar and other islands of the east coast of Africa, the bitter seeds of which are employed—like Calabar beans—by many African tribes as *criteria culpæ* in ordeals. Their chemical investigation cannot be considered

* Abstract of a paper by Prof. Th. Husemann, of Göttingen, in *Archiv der Pharmacie*, Nov., 1876.

† Schmiedeberg, in *Beitr. f. Anat. und Physiol.*, has indeed lately shown that oleander does not contain alkaloids, but glucosides with cardiac effect.

‡ NEW REMEDIES, v., 211.

§ Particularly *Die Pflanzenstoffe*, etc. Von Th. Husemann und A. Husemann. 8vo. Berlin. 1872.

as terminated, since the crystalline substance obtained from them, and termed tanghicin,* does not produce the characteristic effects of the seeds. The activity of the latter is, on the contrary, ascribed to a brown, sticky mass extracted from the seeds, and not entitled to be counted among proximate principles. Husemann, however, suspects that this crystalline tanghicin (of Henry and Ollivier) still partakes of the general properties of the seeds, since it causes intense vomiting in dogs, which is well known to be a main symptom of cardiac poisons. Whether tanghicin is a glucoside or not, is unknown; but the investigations of Kölliker and Pelikan (1850) prove, beyond doubt, that an alcoholic extract of tanghinia seeds is an active cardiac poison; and this alcoholic extract must necessarily contain tanghicin, which therefore was made to take part in the experiments of the last-mentioned physiologists. Should there be discovered in tanghinia a second substance affecting the cerebral functions, as it is made probable by the researches of Ollivier and Henry (who administered some of the above-mentioned brown mass to a guinea-pig, which fell asleep standing), the constituents of the plant would be analogous to various species of Helleborus.

Nearest related, botanically, to Tanghinia venenifera, is *Thevetia neriifolia*, Jussieu (*Cerbera Thevetia*, L.), native of the West Indies and South America; the *ahovai-tree* of the Antilles, which contains, especially in the fruit, the glucoside thevetin,† first studied by Blas and demonstrated by Husemann ‡ to act upon the heart, as likewise does its derivative theveresin. Since the substance thevetin is also found in the bitter seeds of *Cerbera Odallam*, Ham., the Javanese Mangas (Manghas), or Resin-tree, there can be no doubt that the latter apocynaceous plant is also a cardiac poison.

A fourth member of this group is the arrow-poison, *Iné, Onage, or Kombe*, which is used in a large portion of Africa in the killing of large game (elephants, etc.). Pelikan, in 1865, first proved this substance to belong to the cardiac poisons, and his statements were corroborated by the investigations of Fraser (1871), Polaillon and Carville (1872), and Valentin (1873). The source of the poison is a species of *Strophanthus*, either *S. hispidus*, according to Baillon, or a new species, *S. Kombi*, according to Oliver. Fraser claims to have isolated, from an alcoholic extract of the seeds, the active principle, which he called strophanthin, but he has not furnished further data.§

The fifth member of this group is the well-known oleander, *Nerium Oleander*, L., the chemical constituents of which have so far not yet been established with satisfactory exactness.‖ Lukowsky reported the discovery in oleander of two alkaloids, oleandrin and pseudocurarin,* but these were not obtained in a pure state, and require re-examination. It remains to be seen whether Lukowsky's oleandrin, described as a faintly yellow, resinous and very bitter body, is identical with the yellow acrid resin obtained by Pelikan (1866), and pronounced by him as the active cardiac principle of oleander, mixed, however, in the plant with substances which were said by him to interfere with its action. The possibility of the existence of alkaloids in oleander cannot be denied *a priori*, particularly as another nearly related plant, belonging to the same natural family, undoubtedly contains an alkaloid, namely, conessin or wrightin, in the bark and seeds of the East Indian *Wrightia antidysenterica*, R. Br., which Linné yet classified under the genus Nerium (as N. antidysentericum). The last-named plant, however, as has been shown by Husemann in 1865, does not contain a cardiac, but a cerebro-spinal poison.

The poisonous properties of Wrightia dysenterica show, that in the search for other cardiac poisons among the Apocynaceæ we must not always expect to find them in the nearest relatives to plants already known to contain them. Botanical relationship alone does not decide, and in this family particularly especial care must be exercised, as it contains plants of widely varying poisonous characters. Besides the above-named Wrightia, this family includes a great number of tropical plants, which contain an acrid, milky juice, and may be classed among topical poisons or drastic purgatives. Many species of *Rauwolfia*, *Echites*, and *Tabernæmontana* belong to this kind.

A few North American members of this family appear yet to deserve particular attention. *Apocynum cannabinum*, L., is considered as antihydropic, and is also used as an emetic. It is a favorite remedy of the eclectics, together with another species, *Apocynum androsæmifolium*, L., both of which are generally used in the form of resinoids. This so-called apocynin is said to be an excellent alterative aperient, possessing tonic and diuretic properties. It is quite possible that Apocynum may contain a cardiac poison, but on the other hand its effect may be attributed to a topically irritant constituent, as we find the statement that the milky juice is capable of blistering the skin, and that even the effluvia and evaporation of the plant causes swelling of the skin, which properties would make it appear to resemble the poison-sumac and manchineel tree.

Finally, there is to be mentioned one other plant, belonging to this family, namely, *Vinca minor* L., or, lesser periwinkle, which is regarded as an excellent diuretic in many parts of Germany, while in others it is esteemed as an effective remedy in dysentery. The possibility of the existence in this plant of a cardiac poison may also extend to other species of the same genus, for instance,

* Or tanghinin. See *Pflanzenstoffe*, p. 871.

† *Pflanzenstoffe*, p. 869.

‡ *Arch. f. experim. Pathol. u. Pharmacol.*, v., p. 228.

§ A detailed report on this plant and its poison may be found in *Wiggers und A. Husemann's Jahresbericht*, 1871, p. 543, and 1872, p. 614.

‖ See, however, the note on p. 3.

* *Pflanzenstoffe*, p. 419.

Vinca major L., which has been used in other countries for similar purposes.

2. SCROPHULARIACEÆ.

This natural family is distinguished by the peculiarity that one and the same species contains quite a number of cardiac poisons as glucosides. This is foxglove, or *Digitalis purpurea* L., with three glucosides producing cessation of heart's action in systole—which we denominate digitalin, digitaleïn, and digitoxin*—together with a fourth, resembling saponin in its action, and a fifth (digitin), which is inert; besides several decomposition-products of the single glucosides varying in the different commercial varieties of "digitalin."

After the researches of Schmiedeberg had shown that the substance called "digitalin" did not altogether consist of cardiac poisons, we are enabled to understand the varying statements about the greater or lesser activity of the different species of digitalis. . . . . Since we have acquired a clearer knowledge, in general, of the chemical constituents of digitalis, and since we know that the substance digitoxin (the principal constituent of Nativelle's crystallized "digitalin") acts with much greater energy than the two other glucosides, the question arises, whether the differences of effect, which season, place of growth, and quality of soil produce in digitalis, is not owing to the excessive or defective production of one or another of these glucosides. Various analogies appear to corroborate this view; among others, the influence of sunlight and shadow, noticed by Stenhouse, upon the active constituents of Sarothamnus Scoparius, and the increased percentage of quinia in East Indian bark treated by manuring.

Among the plants which are nearest related to digitalis, we could scarcely name a single genus which might be suspected to contain a cardiac poison. The nearest approach to it is perhaps *Chelone glabra* L., which we learn is used by the North American Indians as a tonic and anthelmintic; but it cannot be reckoned among the poisons. A very poisonous plant belonging to this family, and generally omitted in toxicological works, is *Franciscea uniflora*, Pohl.; but our accounts of this Brazilian plant are insufficient to decide whether it belongs to the agents of local or remote effect; it is considered as a hydragogue cathartic, abortive, and antisyphilitic, on account of which latter property it is named "Mercurio vegetal."

(*To be continued.*)

Safrol.

CRYSTALLINE oil of sassafras was first examined by St. Evre in 1844, under the name of sassafras-camphor. According to him the crystals melt between 5° and 17° C., and congeal again at 7.5° C. Grimaux and Ruotte, who examined the oil in 1869, do not mention this crystalline portion, although they found a substance having the same boiling point and elementary composition as sassafras-camphor, but not becoming solid even at 20°. They named this substance Safrol. This was found to be accompanied by another body, Safren, which turns the plane of polarization to the right, while safrol is optically indifferent. Flückiger suspected that this safrol was in reality identical with the first-named sassafras-camphor, and that the refusal of the substance, in the hands of Grimaux and Ruotte, to solidify, was due to some special cause. This was found to be the case; for Flückiger ascertained that safrol is one of those remarkable substances which are capable of existing either in a fluid or solid condition long after they have passed their freezing or melting point. The measurement of the crystals proved them to belong to the monosymmetric system.—A. ARZRUNI in *Neues Repert. für Pharm.*, No. 10.

Hunyadi Janos Mineral Water.

THE Hunyadi Janos, or John Hunyadi mineral water, was so called after a distinguished Hungarian leader, by its proprietor. It comes from the neighborhood of Buda, or Ofen, where the spring was discovered in 1863. Since that time more extensive examinations have led to the discovery of other springs in the neighbourhood, and from these the water is obtained.

It is richer in purgative salts than any water now imported. Of the characters and properties of this water we are enabled to speak from a somewhat extended experience. The water is bright and clear, with no deposit even after long keeping. Its taste is bitter, but not disagreeably so, and possesses nothing of that nauseous character which sometimes renders the use of purgatives disagreeable. Its chief characteristic is that it renders singularly sweet and pleasant the subsequent draught of ordinary water. Only a small quantity is required—not more than a wineglassful—and this should be taken the first thing in the morning, and shortly followed by a hot draught of tea or coffee, or itself may be warmed and taken hot, with or without the addition of ordinary drinking water. It is of great use in habitual constipation, in catarrhal condition of the bile ducts and bowels, and for congestion of the liver and other organs. One thing worthy of note we would remark—that its use does not give rise to subsequent constipation; on the contrary, the bowels remain slightly relaxed for a time.—*The Medical Times and Gazette.*

The Copaiba Tree.

MR. ROBERT CROSS, who has just returned to England from South America with a large number of india-rubber plants (*Hevea Brasiliensis*), has also brought with him, we learn from the *Gardeners' Chronicle*, a small quantity of well-ripened seeds of the copaiba tree, which gives the balsam of copaiva of commerce. The seeds were collected, after much searching, in the forests of Pará. The balsam obtained from the Pará tree is reported to be more transparent than that from other districts, and is called *copaiba blanca*. A large

* After Schmiedeberg, *Archiv. f. exper. Pharmacol.*, iii., 1, pg. 16.

quantity of it is sent annually to the French market, where it commands the highest price. In the Pará forests, the trunks of the trees are seen rising to a height of about eighty feet without a branch. Such trees, if tapped at the proper time —which has yet, however, to be determined— will often yield 4 "potos," or about 84 pints, each. Mr. Cross describes the life of the balsam collector as being a very wretched one.

Chloride of Lead as a Disinfectant.

DR. R. H. GOOLDEN recommends the following solution as a disinfectant: Dissolve 36 grains of the nitrate of lead in two pints of water and 120 grains of common salt in three gallons of water. Pour these together and allow them to settle, and you will have a definite saturated solution of the chloride of lead, which contains no more of the salt than is necessary to decompose fetid gas, and is not poisonous, for it is converted in the bowel into the sulphide.

Iodide of Starch as an Antidote.

DR. BELLINI, Professor of Toxicology at the Royal Institute at Florence, recommends iodide of starch as a valuable antidote in poisoning by alkaline and earthy sulphides, caustic alkalies and ammonia, and the vegetable alkalies. In poisoning by alkaline or earthy sulphides, he thinks it preferable to all other antidotes; in poisoning by caustic alkalies, it is applicable when acid drinks are not at hand.

Chloral with Solid Fats.

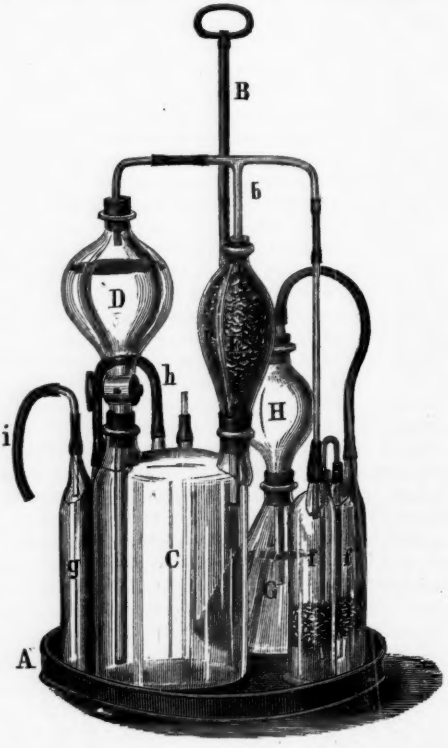
AN anonymous writer in the *Med. and Surg. Rep.* says, as a therapeutic agent, chloral has become so popular that its range of application is as diversified as any drug or chemical of a century's standing; but its nature has not been sufficiently studied to construct formulæ readily that furnish preparations easily dispensed and always praiseworthy; on the contrary, formulæ are written which furnish not only inelegant, but almost incompatible preparations. A case in point is its combination with solid fats. It is a matter oftentimes overlooked, if not entirely unknown, that chloral hydrate is a solvent for fats, so much so, that solid fats become liquefied by contact. Hence, it is not advisable to prescribe, for instance, chloral with lard, simple ointment, or even with simple cerate, in a very large proportion. With oleum theobromæ it forms an unctuous mass, which furnishes a very creditable preparation dispensed as an ointment; but to make from this combination a suppository, is almost an impossibility. Still less possible is it to make a suppository containing, with chloral, one of the solid extracts, which must previously be moistened with a little water to make it miscible with the solid fat, as a drop of water increases enormously the fluidity of the oleaginous mixture. The writer has made a number of experiments as to the best excipients, and finds that equal parts of spermaceti and oleum theobromæ have the advantage over any other. In a suppository containing ten to twelve grains of chloral, this is about the proper proportion. Deviating from this strength, the proportion of spermaceti must be increased or diminished accordingly. Vaseline and paraffin, using three of the former to two of the latter, make a very good base, but it does not melt as nicely into an unctuous mass as does the former.

PHARMACY.

A Constant Generator of Chlorine, Ammonia, and Hydrochloric Acid.*

BY HERMANN KÄMMERER.

AN apparatus which would deliver an easily regulated, either rapid or slow supply of chlorine, or ammonia, or hydrochloric acid gas, has been a desideratum in many chemical laboratories. It is believed that this want is filled by the apparatus figured and described below, which is easily put together and retains its activity for a long time.



Upon a sheet-iron tray A, provided with a central rod B, for lifting and carrying the whole apparatus, is placed the generating vessel C, being a

* *Ber. d. Deutsch. Chem. Ges.*, 1876, 1548.

two-necked Woulff's bottle, which is filled to one-third of its capacity with chloride of lime. One of its necks carries a globe-, or separatory funnel with stopcock, containing hydrochloric acid mixed with one-half of its volume of water, and saturated with chlorine by introducing into it a small quantity of chloride of lime. The other neck carries a pear-shaped glass globe E, filled with pieces of glass (below), pumice and asbestos (above). Both connections are made by means of perforated rubber stoppers. D is connected with the T tube *b* by means of a short rubber tube. By allowing the acid in D to drop or flow upon the chloride of lime in C, it is easy to regulate a slow or rapid generation of chlorine. The latter is, however, not given up until the calcium compound has been fully decomposed into hypochlorous acid and calcium chloride; on first allowing the acid to flow down, there is produced a greenish brown solution, and afterwards development of chlorine. The liquid in the flask becomes heated to such a degree, that the bottom of C would be in danger of cracking if allowed to stand upon the sheet-iron support. This is prevented by placing the Woulff's bottle upon a block of rubber. The chlorine gas passes first through E, where all liquid particles which are carried upwards mechanically are retained, and then enters the wash-bottles *f f*, containing water. *Both bottles are connected by a single bent tube, reaching nearly to the bottom of each.* In this manner any receding of the liquid in the wash-bottles is effectually prevented. If it is desired to dry the gas, it may be passed through sulphuric acid, contained in the bottles *g g*, which are connected in the same manner as *f f*, and the dry gas delivered by the tube *i*. The flask G contains solution of soda provided with the globe-funnel H, which sits *loosely* in the neck. Whenever the generation of chlorine is to be discontinued, the stopcock of D is closed, and the delivery tube *k* or *i* is connected with H. All excess of chlorine is thereby carried into the soda solution, where it is completely absorbed.

If the apparatus is to be used for the production of ammonia, the Woulff's bottle C is filled with pieces (of about 1 cm.) of dry soda, and the globe-funnel D is charged with a saturated solution of ammonium sulphate, to which a little soda has been added. Decomposition takes place with production of a considerable degree of heat. The wash-bottles *f* and *g* are replaced by jars containing lime and potassa, and the absorption flask G is charged with moderately dilute sulphuric acid. Between the T tube upon E and the drying jars, a small wash-bottle containing glycerin may be attached, in order to be able to better observe the rapidity of the current.

To generate hydrochloric acid, C is filled with large pieces of sublimed ammonium chloride, D with concentrated sulphuric acid, and G with soda solution.

[The same apparatus may be used for the generation of sulphuretted hydrogen, by charging D with dilute sulphuric acid, C with ferrous sulphide, and G with a concentrated solution of lead acetate.—Ed. N. R.]

Carrageen-Wadding.

COTTON wadding saturated with a decoction of carrageen or Irish moss and dried, has been proposed and prepared by Lelièvre, as a substitute for linseed-poultices. A thin layer of cotton is spread out upon a sheet of tinned iron, a concentrated decoction of Irish moss is applied to it (about 1 cm. high), and another layer of cotton of the same size, but thinner, is placed over it. After a few minutes, the whole is covered with a second sheet of tinned iron, a gradually increased pressure is applied, and the wadding finally dried in a lukewarm place. It is prepared for use by allowing a piece of the wadding to soak for about fifteen minutes in a plate of hot water. It swells up, and is applied, while still hot, as cataplasm.*—*Pharm. Centralh.*, 1876, 382.

Oleate of Bismuth.

THERE are but very few solvents of bismuthic compounds which permit their promiscuous use internally or externally. That which is most commonly employed is a solution of ammonium-citrate, containing bismuth either as nitrate or as citrate—according to the mode of preparation, and known under the names "liquor bismuthi" or "liquor bismuthi et ammonii citratis." Mr. S. C. Betty now proposes a new solvent, namely, oleic acid, which will probably be found to be more advantageous when desiring to employ the solution endermically. This compound was first suggested by Dr. Louis Lewis, of London, and is prepared by Mr. Betty as follows: Oxide of bismuth, Br. P.,† is ground very fine, and the oleic acid gradually incorporated with it. The mixture being placed into a suitable vessel, is subjected to a temperature of nearly its boiling point, then allowed to digest with frequent agitation at a temperature of about 60° C. during four days, or until it solidifies. The result is pharmaceutically a plaster, chemically an oleate of bismuth. According to Mr. Betty's statements, however, the results of this manner of preparation are not uniform, so that probably an easier or more reliable process will have to be substituted.

As to the therapeutic application of this compound, it might be objected to by those who maintain that the energy of the bismuthic compounds is exerted by mechanical contact. Yet it will probably be found a useful application in certain skin diseases, as it readily melts in the hand, is bland to an excoriated surface, and penetrates by its limpidity.—From *Pharm. J. and Trans.*, Dec., 1876, 470.

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*On page 89 of the last volume we mentioned this among our trade notes, and referred to John F. Henry, Curran & Co., of this city, as the agents for the sale of the article in this country.

† The trisnitrate and carbonate are useless for this purpose.

Note on the Benzoates in Suint.

At the last meeting of the British Pharmaceutical Conference, the following paper was read by Mr. Andrew Taylor:

"The potash salts recovered from suint, the greasy matters washed out by water from wool, now constitute one-fiftieth part of their annual production. Little or nothing has been done to the commercial utilization of the greasy matters themselves. Messrs. Schulze and Allrich extracted some very interesting constituents by alcohol, but the portion of the suint unattacked by this solvent consisted of benzoates. Desiring to obtain a large result, I employed an eighty-gallon jacketed steam still, working at a pressure of twenty pounds to the square inch, and distilled in it equal mixtures of petroleum spirit and suint, until I had operated on a ton of the latter substance. Suint is usually concentrated to 30° B., weighing fifteen pounds to the gallon, and one hundred and fifty gallons had to be gone through. I recovered nearly all my petroleum spirit, and besides, a yellow fatty liquid. Every five gallons of suint used gave one of this fat; this is in the proportion of thirty gallons to the ton. On heating eight gallons of this fat in a steam jacket, after adding about a gallon of hydrochloric acid, for about an hour and a half, during which the boiling shed was filled with ammoniacal and other vapors, I found remaining a brown liquid filled with benzoic acid crystals; the sides of the vessel were also covered with these shining needles. Fully three-quarters of a pound of dried substance was collected from the drainings and the sides of the vessel, or nearly three pounds to the ton of suint. I believe the whole benzoic acid was not collected, and from laboratory experiments I find the water washed from the wool yields nearly three per cent. more benzoic acid than the concentrated suint.

Whatever economic difficulties may surround the commercial recovery of potash salts from suint, such a ready source of benzoic acid ought to bring it into much more general use, especially as a preservative agent for organic substances. It might be easily collected at every sheep-washing station."—*Chem. and Drug.*

Fluid Extract of Senna.

A. F. W. Neynaber* contrasts the views and usages of European pharmacists in regard to the fluid extract of senna with the method directed by the United States Pharmacopœia, which requires it to be made with alcohol, water, and glycerine, in the proportion of two parts by measure of the former to one part each of the latter.

He believes that:

1. An aqueous extract is superior to an alcoholic extract of senna.

2. A certain percentage of alcohol (20 per cent.) should be added to the water to prevent the souring of the fluid extract, and also to prevent the extraction of inert mucilage from the senna.

3. Senna, to be extracted by means of a menstruum containing no more than 20 per cent. of alcohol, should be coarsely powdered to the fineness of 16 meshes.

The following he recommends as a good working formula according to the above views:

"Senna, coarsely powdered, 16 Troy ounces. Moisten with a menstruum of alcohol 1 measure, water 4 measures. Pack in a percolator; close the outlet so that the liquid will pass only in drops, and continue the percolation until the senna is exhausted. Add to the percolate two fluid ounces of glycerine, evaporate it to 13 fluid ounces, add 3 fluid ounces of alcohol, and mix."

He says that a fluid extract of senna prepared carefully according to this formula, from the best Alexandria senna, will be clear, efficacious, and will keep well.

Arsenical Phosphorus.

At the last meeting of the American Pharmaceutical Association a paper was presented by Mr. L. Dohme, of Baltimore, in which he reported the results of his analyses of various brands of phosphorus. While he found the American phosphorus free from arsenic, he ascertained the presence of the latter in two English samples to the extent of 0.562 per cent. and 1.066 per cent. respectively.* Mr. E. Reichardt, of Jena, has lately noticed that a lot of phosphorus in flat pieces had, without any known cause, turned into the black modification; and as some chemists had attributed this change to a probable presence of arsenic, it was examined for this body, but with a negative result. On the other hand, stick-phosphorus of recent manufacture was found to contain not less than 3.51 per cent. of arsenic. This arsenical phosphorus certainly does not long retain its original waxy appearance. Very soon it turns white, or, under the influence of light, red; so that it would appear that the presence of this impurity had some influence in inducing the change.—*Arch. d. Pharm.*, Nov., 1876, 442.

A Crystalline Compound of Quinia and Ferric Chloride.

During his experiments with alkaloidal precipitants,† Dr. Rich. Godeffroy observed that quinia hydrochlorate is capable of forming a crystalline compound with ferric chloride. If a watery solution of the quinia salt be mixed with a watery solution of the iron salt, and the mixture be concentrated—with the precaution of adding from time to time a few drops of hydrochloric acid, to keep up an acid reaction and prevent the formation of a basic salt of iron—a double salt of quinia hydrochlorate and ferric chloride separates in small, yellowish red crystals.‡ This compound is easily soluble in water and alcohol; it has a bitter and inky taste, and may be heated to 110–120° C. without being altered.—*Arch. d. Pharm.*, Nov., 1876, 435.

* *Druggists' Circular.*

* New Rem., v., 307. † See p. 16.

‡ This salt might perhaps be used medicinally, in which case it might be termed *Quiniæ et Ferri Chloridum.*

How to Keep Vegetable Drugs.

HANS M. WILDER says (*Druggists' Circular*): "The reason of drugs spoiling, notwithstanding all extra care in the shape of tight-fitting covers, and the use of tins and glass, is the following: When herbs, etc., are properly dried, they still contain a not inconsiderable quantity of water, and will, if kept in non-porous receptacles, by each rise of temperature, load the air on top with vapor which condenses at a lower temperature, and shortly the contents begin to grow mouldy. If, on the contrary, kept in porous receptacles, such as wood, pasteboard, etc., the moist upper layer of air will, through the pores, equalize itself with the surrounding air. Herbs that are over-dried attract moisture as soon as the receptacle is opened. That vegetable drugs should be kept in a dry place, it is not necessary expressly to state.

"Breau (1865) divides powders into three classes:

'I. Those that keep *only* in paper or pasteboard: Aconite, angelica, belladonna, cantharides, conium, cochineal, columbo, digitalis, elecampane, gentian, gum-arabic, hellebore, hyoscyamus, ipecacuanha, jalap, liquorice root, marshmallow, orris root, rhatany, roses, savin, stramonium, and similar powders.

'II. Powders which keep as well in paper as in glass: Agaric, angostura, arnica, anise, benzoe, cascarilla, catechu, charcoal, colocynth, cream of tartar, euphorbium, male-fern, guaiac, ginger, Peruvian bark, rhubarb, saunders, tartar emetic, turmeric, etc.

'III. Powders that keep *only* in well-stoppered bottles: Asafœtida, camphor, castoreum, cubebs, gum tragacanth, opium, squills, etc.' "

Mr. Wilder believes that tartaric acid also keeps better in paper than in glass, and offers the following practical directions, which, he says, will insure that a stock of vegetable goods will always be in good condition:

"As soon as the first warm days come in spring, or in the fore part of summer, give all your herbs, etc., including the drawers, boxes, and other things, a thorough airing and sunning. The sun, if not a scorching noon-day, will not hurt them. Do not put the herbs, etc., in tin cans or glass before they have cooled down a little; with drawers and boxes it makes no difference. Before setting them away, garble and free them from the finest dust. If you have tins, make one or two holes in the covers with a nail; with glass put a strip of pasteboard or a bit of wood or wire between the stopper and the neck.

"When you get your stock filled up from the wholesale druggist, open the parcels and give them a good drying before putting them away. When you dry the roots, give them a good overhauling with an old clothes-brush, so as to remove all the dust; roots are not hurt by a good heat. If possible, repeat the airing in the fall. As to powders, give them an airing at least once a year, and before you put those you get from the wholesale druggist away, open the parcels and spread the powders in quite a thin layer, to air-dry them. It is evident that the foregoing rules do not apply to special cases: delicately-colored flowers and strong-scented herbs and roots."

New Method of Preparing Soda from Common Salt.

H. GRÜNEBERG and J. Vorster propose the following method: Salt and alumina are mixed with water to a pulp, and the mass is dried, broken into small pieces, and treated with steam heated to dryness. Hydrochloric acid then escapes, and sodium aluminate remains behind; the latter is freed from admixtures by lixiviation and either decomposed by means of carbonic acid, or with caustic lime.

Instead of alumina, ferric oxide or any other metallic oxide may be used. If caustic potash is to be prepared, the common salt is replaced by potassium chloride.—*J. Chem. Soc.* from *Ding. Pol. J.*

Reactions of Salicylic Acid.

IN the November and December numbers of NEW REMEDIES we gave the reactions for carbolic and benzoic acids, taken from a paper by Richard Godeffroy in the *Zeitschr. des Oest. Apoth.-Vereins*, and we now quote from the same source as much as relates to the reactions of salicylic acid.

1. Salicylic acid, heated above its melting point, splits into *carbon dioxide* and *phenol*:

$$C_7H_6O_3 = CO_2 + C_6H_6O.$$

2. On distilling salicylic acid with excess of lime, *calcium carbonate* is formed and *phenol* distils over:

$$C_7H_6O_3 + CaO = Ca\,CO_3 + C_6H_6O.$$

3. If salicylic acid is heated with *amylic alcohol* (fusel-oil) under pressure at 250° C., it splits likewise into *carbon dioxide* and *phenol*.

4. *Sodium-amalgam*, acting upon an acidulated solution of salicylic acid, which must be constantly kept acid, transforms it into *salicylous* acid:

$$C_7H_6O_3 + H_2 = C_7H_6O_2 + H_2O.*$$

5. Sulphuric acid dissolves salicylic acid without color, and forms from it two isomeric *sulpho-salicylic* acids.†

6. On heating salicylic acid with dilute sulphuric acid and manganic oxide, *formic acid* is produced, which may be distilled off.

7. Dilute sulphuric acid and potassium chromate likewise convert salicylic acid into *formic* and *carbonic acids* (Kraut).

8. On heating a mixture of sulphuric acid, wood-spirit (methyl alcohol), and salicylic acid, an agreeably aromatic liquid distils over, which is *methylic salicylate*.

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* Sodium-amalgam in contact with water takes oxygen from the latter to oxidize the sodium, and hydrogen is given off; the latter being in a nascent condition, *reduces* the salicylic acid by taking from it a portion of its oxygen to form water.

† Ira Remsen, *Sill. Journ.*, 6.

9. Concentrated nitric acid converts salicylic acid already at the common temperature into *nitrosalicylic acid*, $C_7H_5(NO_2)O_3$; dilute nitric acid produces the same result by heating.

10. Fuming nitric, or a mixture of concentrated nitric and sulphuric acids, converts salicylic acid, under violent reaction, into *picric acid*, $C_6H_3(NO_2)_3O$, and *carbonic acid*.

11. Chlorine and bromine produce *substitution-products*.

12. Iodine acts upon a watery solution of the acid only when heated; if melted with dry salicylic acid, it produces *iodized substitution-products* and a red amorphous body.

13. Warm hydrochloric acid dissolves considerable quantities of salicylic acid; on cooling or on dilution with water it separates again in brilliant white, fine needles (Godeffroy).

14. Potassium chlorate and hydrochloric acid convert it into *chloranil* (tetrachlorchinon), $C_6Cl_4O_2$.

15. On heating salicylic with aqueous hydriodic acid to 280° C., *phenylic ether* and *carbonic acid* are formed.

16. On distilling it with phosphorus penta-chloride, *chlorosalicylchloride*, $C_7H_4Cl_2O$ is formed.

17. If phosphorus trichloride be added to a mixture of salicylic acid and anilin, *salicylanilide* $C_6H_5NH(C_7H_5O_3)$ is produced.

18. Iodine and mercuric oxide acting on salicylic acid produce *iodized substitution-products*.*

19. On mixing salicylic acid (3 mol.) with glucose (1 mol.), pouring over them a large excess of concentrated sulphuric acid, and gently warming, a fine blood-red color is produced; this color disappears after a while, and the mass turns brown and finally black.†

20. Caustic potassa solution dissolves salicylic acid readily; the solution soon turns brown in the air.

21. Watery solution of salicylic acid and its salts is colored intensely violet by ferric salts. This reaction is so delicate that Aug. Vogel‡ has proposed it as a substitute for alkaline sulphocyanides as reagent for ferric compounds. In strongly acid solutions, however, this reaction does not take place. H. Weiske employs it as an indicator in alkalimetry.§

On evaporating the intensely violet solution containing salicylic acid and a ferric salt to dryness, the color disappears entirely; but the least quantity of water restores it (Godeffroy).

22. Salicylic acid mixed with cupric sulphate and caustic soda solution produces a solution of an intensely bluish green color, from which even a large excess of alkali fails to precipitate any cupric oxide.‖

23. Solution of sodium salicylate forms a grass-green liquid with cupric sulphate solution.*

24. Silver nitrate produces a white precipitate in solutions of alkaline salicylates; but no precipitate in solution of salicylic acid.

25. Lead acetate behaves like the preceding.

26. On mixing a hot saccharated solution of simple calcium salicylate, $Ca(C_7H_5O_3)_2$, obtained from calcium carbonate and aqueous solution of the acid, with a boiling solution of caustic lime in saccharine water, a heavy crystalline precipitate of so-called *neutral calcium salicylate*, $CaC_7H_4O_3$, almost insoluble in water, is produced.†

27. If a solution of salicylic acid is boiled with a solution of potassium ferrocyanide, *hydrocyanic acid* is produced, and the liquid becomes turbid. This reaction is very delicate, and permits the detection of very small quantities of salicylic by means of the reagents for hydrocyanic acid (Godeffroy).

28. On boiling a solution of salicylic acid with a solution of potassium permanganate, the characteristic color of the latter is immediately destroyed, and *carbonic acid*, *phenol*, and *brown hydrated manganic oxide* are produced.

A Vapor Condenser.

THE annexed cut, which represents an apparatus by no means new, but not so well known as it deserves, almost explains itself. It is intended

for the recovery by slow distillation of alcohol, ether, or other volatile liquids from solutions which have to be evaporated slowly, either to produce a crop of crystals or for other causes. The apparatus consists of a tinned-iron or copper kettle, into which fits a hood with double walls, the space between which is kept filled by means of the funnel *f* with cold water, the excess of the latter flowing off through *g*. Along the inner surface of the hood there is attached a gutter sloping downwards towards the outlet-pipe *c*, which receives the condensed vapors, and carries them into the receiver.

* P. Weselsky, *Wien. Ber.*, 69, ii., 832.
† T. L. Phipson, *Ch. News*, 28, 13.
‡ *Pharm. Zeit. f. Russl.*, 1876, 398, fr. *Neu. Rep. f. Pharm.*
§ W. Weith, *Ber. d. Deutsch. Chem. Ges.*, 1866, 342. See NEW REM., v., 137.
‖ NEW REM., v., 298, fr. *Zeit. f. Anal. Chem.*

* Hager, *Pharm. Centralh.*
† Limpricht, *Organ. Chem.*, 1862, 904.

Where water-pressure is available, the funnel *f* may advantageously be replaced by a tube soldered into the outer wall of the hood near the bottom; a rubber hose may be attached to this, and more perfect condensation is thereby effected. The space between kettle and hood must of course be made air-tight. The application of heat may be effected in various ways, to suit the volatility of the liquid or the facilities of the operator.

In absence of such an apparatus, an ordinary still may be used. We are in the habit of using a quantity of ordinary glycerine, which is placed into the still, and the vessel containing the liquid to be evaporated is placed partially into it. The head of the still having been connected with the condenser, a very gentle heat will cause the slow volatilization of the liquid; when the operation is finished, the glycerine is removed, to be used for the same purpose on another occasion.

A Method of Detecting and Estimating Castor and other Fixed Oils in Balsam Copaiba.*

BY DR. MUTER.

THIS oleo-resin, commonly but wrongly termed a balsam, has been said in books for many years back to be subject to admixture with fixed oils, especially castor oil. The British Pharmacopœia furnishes a qualitative method of examination, but the tests are in practice totally insufficient, as the exact degree of rectification of the benzole (an important point) is not stated, and the difference between a pure balsam stain and that with a small percentage of oil is very slight, unless the two are observed side by side. The other methods which have been proposed may be summarized as follows:

1. Pure balsam gives a translucent, and not an opaque emulsion, with strong solution of ammonia.

2. Pure balsam, if boiled with water for some hours, leaves a tenacious resin.

3. The specific gravity.

The latter test is entirely fallacious, owing to the great variation in commercial samples; and the others, though possibly characteristic with large admixtures, fail with anything under 20 per cent.

Observing the close affinity between copaivic and pinic acids, it struck me, that advantage might be taken of the difference of solubility of the sodium soaps in certain menstrua. A very good solvent for sodium pinate has been discovered by M. Barfoëd to be a mixture of five parts by volume of absolute ether and one part absolute alcohol, which, moreover, only dissolves sodium oleate to an exact extent corresponding to 1 in 1,000. I will not occupy space by detailing at length the numerous experiments on a number of samples of balsam, varying in age and color, from every known commercial source; but the whole thing ended in the certain conclusion that besides the essential oil (which is dissipated in the process of analysis), good commercial balsam contains only copaivic acid, which forms a sodium salt, instantly soluble in ether-alcohol mixture, and a little altered resin not so readily saponifiable, forming a salt only slowly soluble.

The amount of this second resin I have found to vary slightly, and, in old samples, especially Maranham balsam, it may sometimes amount to five per cent., although usually really less.

Going upon the principle that, in performing any official analysis, the lowest commercial standard should be taken, I have adopted six per cent. as the highest possible quantity of second resin ever existing in any sample of balsam still having a trace of odor remaining. This wide standard may sometimes lead to an under-estimation of the oil by two or three per cent., but renders any over-estimation impossible.

The actual process I employ is as follows: 3 to 4 grammes of the sample are weighed into a clean, dry flask, and saponified on the water-bath with 50 c.c. of alcohol and lumps of caustic soda weighing not less than 5 grammes. When all is dissolved, water is added, and the whole washed into a half-pint basin so as to nearly fill it, and evaporated to 100 c.c. over a low gas flame Dilute sulphuric acid is added till the whole just becomes permanently turbid, and then solution of caustic soda is dropped in till it *just clears* again. By this means a solution is obtained with least possible excess of alkali, and with a good amount of sodium sulphate. The whole is now evaporated to *perfect* dryness* on the water-bath, stirring towards the end, so that the sulphate may mix with the soaps and produce an easily pulverulent residue. The residue is removed from the basin into a small wide-mouth stoppered bottle, and treated with 70 c.c. of ether-alcohol and well shaken up.

As soon as it is fairly settled, the fluid is filtered off through a *quick* filter, and this is repeated with two successive quantities of 70 c.c., making 210 c.c. in all of the solvent used. The residue in the bottle and on the filter now consists of sodium oleate and sulphate if the balsam be impure, and of the latter only if pure, with a little trace of the insoluble resin-soap already referred to. The contents of the bottle and filter are dissolved in warm water, and after heating till all smell of ether is gone, the whole is boiled, freely acidulated with hydrochloric acid, and set to cool. If, when cold, nothing but a few specks of brown resin should rise to the surface, the balsam is pure; but if an oily layer is formed it is adulterated, and the smell of the separated oleic acid will at once determine whether it is actually castor-oil or not. In the case of the presence of oil, two grammes of pure and dry white wax are added, and the whole heated till the wax melts with the oleic acid. On cooling, a solid cake is formed, which

* From the *Analyst*, 1876, 160.

* The best way to insure *absolute dryness* is to moisten the apparently dry residue with a few drops of absolute alcohol, and again to dry.

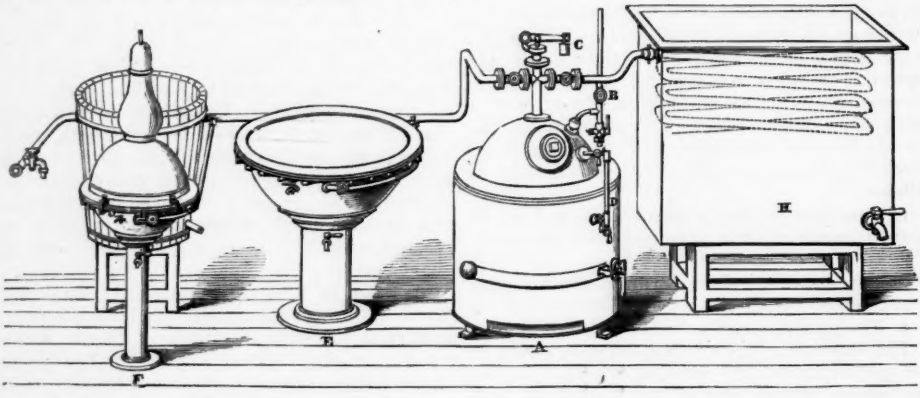
is detached from the side of the beaker, and the fluid below passed through a filter. The cake is once more melted in water, cooled, detached, dried by gentle pressure in blotting paper, put into the water oven in a weighed platinum dish till dry, and then weighed, and the weight of the wax used deducted. The beaker, filter and rod etc., used are, if at all dirty, dried, extracted with ether, and the residue left after evaporation weighed and added to the total.

The calculation is performed as follows: To the weight in grammes found, add 0.20 for loss of oleic acid in solvent and then say:

$$95 : 100 = \text{total oleic acid} : x.*$$

and from the total found deduct six per cent. for possible altered resin in the balsam.

In conclusion, I may say that the process is in practice very simple, and for all ordinary purposes, if the beaker be well scraped out, the weight of the main cake may be taken as sufficient to give results true within three per cent. *below* the real amount, which is accurate enough for public purposes, and saves time and the expense of extra ether. Unless oil actually *floats, and remains, on cooling, in drops*, after adding the hydrochloric acid, the sample may be passed as good.



Pharmaceutical Apparatus.

In a late number of the *Pharmaceutical Journal and Transactions*, Mr. Octavius Corder published a drawing of a pharmaceutical apparatus adapted to the uses of retail dealers who desire to make "all such pharmaceutical preparations as may reasonably be expected by a chemist of the present day." The following is Mr. Corder's description of the apparatus:

"A is a copper boiler holding about twelve gallons, fixed in a wrought-iron jacket and heated by a ring gas-burner. I used copper for the boiler, because, being made thinner than iron, the water is brought to a boil much more rapidly, it does not foul so soon, and is altogether better adapted for the purpose. I chose gas as a heating power, not that it was so cheap as coal, but from its being clean, free from smoke, and at once lighted, lowered, or put out, as occasion may require.

"The boiler is supplied with water direct from the main by merely turning on the tap, B. The boiler is provided with steam-gauge, C, which blows off at five pounds pressure; also, with a water-gauge, D, and with a suitable arrangement for blowing out the boiler whenever it becomes foul by deposit of lime, etc. H is a galvanized iron tank, provided with a tin worm, so that all waste steam may be condensed as distilled water; those who are accustomed to use distilled water for all dispensing purposes, making tinctures, infusions, decoctions—indeed, all pharmaceutical preparations, will fully appreciate this part of the arrangement. The whole of the pans, etc., being copper tinned, all the condensed steam is available as distilled water. The pan, E, holds sixteen gallons, and is adapted for decoctions, etc.; its evaporating power is about two gallons per hour. The pan, F, holds six gallons, and being fitted with a suitable head and worm, is used for all the distilled medicated waters, such as dill, cinnamon, peppermint, etc., also for recovering the spirit from ext. colocynth and such like preparations. It distils about one gallon per hour."

The original drawing includes an earthenware still for the manufacture of aromatic spirits of ammonia only. As the United States Pharmacopœia directs this preparation to be made by mixing its ingredients simply, and not by distillation, we have left it out in our copy of the drawing.

"The amount of gas used is about fifty feet per hour, costing somewhat less than three shillings; but, by saving the condensed steam, sufficient distilled water will be obtained to more than pay the heating. If the full steam of the boiler is turned into the worm, H, about four gallons of water per hour are obtained. The whole of the work, as far as the boiler, gas-burner, pans, and pipe-fittings,

* In the original this proportion is not clearly stated, but it is evident that the author meant it as given above. The Dutch journal "*De Pharmaceut*," in its number of Dec. 20, comments upon this method and calculation by declaring it rather liable to uncertainty, although Dr. Muter's proof-analyses would show its great reliability; besides, the general addition of 0.2 in every case, and the assumption of 95% oleic acid in any oil, may lead to errors.

were made for me by Messrs. Pontifex and Wood, Farringdon Works, Shoe Lane, who have not only paid every attention to what I required, but have also executed it in a substantial and most satisfactory manner. I would add that it is well to cover the top of the boiler, and the sides of the pans and pipes, with felt, which effectually prevents a considerable loss of heat by radiation."

THERAPEUTICS.

On the Effects of Chlorhydrate of Pilocarpine.

Dr. Adolph Weber of Darmstadt states in a communication to the *Centralblatt f. d. Med. Wissenschaften*,* that he had been for some time in the habit of using an infusion of jaborandi in his ophthalmological practice with great success, and that he lately received a preparation labeled "Pilocarpium muriaticum" from E. Merck, which is supposed to be the alkaloid of jaborandi. It was a white, transparent, crystalline salt, of a slightly bitter, puckering taste, and soluble in an equal weight of water to a colorless solution. It was obtained from the so-called Pernambuco jaborandi, while the Brazilian variety is said to be devoid of alkaloid. The yield from 100 kilos of jaborandi is 70 grammes of the muriate *in crystals;* † a portion remains in the mother-liquid and cannot be recovered, and another portion is lost by decomposition. Merck estimated the loss from both of these causes at 30 to 40 grammes per 100 kilos, which statement, however, appears to the author somewhat doubtful, because in this case the hypodermic injection of the pure alkaloid would only be about of the same effect as the infusion of an equivalent quantity of the leaves, contrary to the well-established fact that alkaloids act in proportionally much smaller doses than an *equivalent* quantity of the crude drug.

Dr. Weber's experience has proved to him that the effects of one cub. centm. of a two per cent. solution of chlorhydrate (muriate) of pilocarpine are equal to an infusion of five gm. jaborandi leaves in 120 gm. water.

The experiments which he made with this alkaloidal salt confirm the statements of other practitioners as to the peculiar effects of jaborandi, namely, production of profuse salivation and perspiration.

The first and most constant symptom which appears even after the administration of the smallest doses (0.5 c.c. or about 8 min. of a ½ per cent. solution), is *increased secretion of saliva;* it begins three to five minutes after the subcutaneous injection and lasts generally several hours longer than the second symptom, namely, *profuse perspiration.* The average dose to produce the latter promptly is 1 c.c. (about 16 min.) of a 2 per cent. solution, equivalent to an infusion of 5 gm. (about 77 grs.) of the leaves. The duration of this diaphoretic effect is about one hour, if the patient remain out of bed, but may be prolonged to two or three hours by placing the patient between blankets. The increase of *pulsation* is about five to ten beats per minute, but increase of *temperature* is rarely over 0.5 to 1°. The sensation of *depression* which has been observed after the administration of an infusion of jaborandi is very transient after the subcutaneous injection of pilocarpine, and nausea (never, however, vomiting) occurs only if the saliva is not all ejected. *Contraction of the pupil* makes its appearance later, but it outlasts all the other effects by about twelve hours. The average duration of the effects upon the eye of one drop of a two per cent. solution are: commencement of contraction after ten minutes; maximum reached after twenty to thirty minutes; duration of maximum contraction three hours; duration of general noticeable contraction twenty-four hours. The *loss of weight* after a profuse salivation lasting two or three hours, is on an average two kilogrammes; and in one case a loss of even four kilos was observed.

The chlorhydrate of pilocarpine was used by Dr. Weber chiefly on account of its great power—superior to any other remedy—of inducing change and motion of organic matter in the body; it was never resorted to on account of its myotic effect, for which latter eserine is abundantly sufficient. Now, although it would lead too far, in the opinion of Dr. Weber, to suggest all possible diseases in which this remedy might be indicated, he desires particularly to draw attention to its use in cases of opacity of the corpus vitreum, after chronic irido-choroiditis: in such cases a topical application, repeated ten or twelve times, has been found to produce remarkably rapid recovery. He also mentions the case of a child of three years, suffering from croup, upon which tracheotomy had been performed, and which was in the last stage of asphyxia, from pulmonary œdema, five days after the operation. After the hypodermic administration of a two per cent. solution—the child being placed on its side, with depressed head—a profuse perspiration and salivation set in, at the cessation of which all symptoms of asphyxia had disappeared, and perfect recovery took place after three weeks.

The injections are painless and do not produce any bad local effects. The solution of the alkaloidal salt, if carefully kept, remains entirely clear and effective for a long time.

* 1876, No. 44, Oct 28.

† Compare the paper of Mr. Chas. T. Kingzett, on p. 359 of our last volume; and Mr. A. W. Gerrard's paper on p. 331, *ibid.*

Sodium Sulphate as an Antiseptic.

Dr. Minnich (*Gaz. des Hôpitaux*) proposes the use of sodium sulphate, which he prefers to both carbolic and salicylic acids, not only for surgical dressings, but also as an excellent application in erysipelas. Aside from its cheapness, it has various advantages not possessed by the other remedies. He applies it in the same shape as Lister's dressings. The solution usually employed

contains: 1 part of sodium sulphate, 9 parts of water, and 1 part of glycerine. A large number of successful cases have proved its efficiency.

Oxygen in Hydrophobia.

THE following case of apparently successful treatment of hydrophobia is reported in the *Allgemeine Medicinische Central-Zeitung:* A girl of twelve years was bitten in the hand by a rabid dog. The wound bled but little, and extended into the cellular tissue. It was immediately cauterized with nitrate of silver, and healed almost completely within seven days. About this time the child was seized with an unusual irritability. On the seventeenth day distressing dyspnœa set in, with free inspiration, but groaning and spasmodic expiration, and swallowing was almost impossible. The pulse was accelerated, the flexor muscles of the fingers were contracted, and no evacuation of either rectum or bladder took place for twenty-four hours. A quantity of about three cubic feet of oxygen gas was administered by inhalation, which afforded almost immediate relief, and produced complete cessation of the symptoms within two hours and a half. On the next day the child had another attack, with clonic cramps of the muscles of the back and extremities, dyspnœa, and complete coma, all of which symptoms were removed after forty-five minutes by the administration of oxygen. Slight attacks of dyspnœa recurring during the next ten days were treated in the same manner, and camphor monobromide was administered for three weeks more.

The Effect of Mixed Cinchona Alkaloids.

As a supplement to our late article* on the manufacture of a cheap cinchona-febrifuge in India, we have to state that reports have been quite lately received from a number of public hospitals in India, where the mixed alkaloids had been subjected to a series of systematic trials, which characterize the preparation as possessed of febrifuge properties inferior to quinia, and frequently producing gastric disturbances. It is quite likely that its manufacture will be discontinued, at least for local use. But we would imagine that the mixed alkaloids could be manufactured on the spot and exported as such to England or this country, to be worked up and separated by alkaloid-manufacturers, as the saving in freight would be a very considerable item.

Chronic Digitalis Poisoning.

BÄLZ describes in the *Archiv für Heilkunde*, vol. xvii., the case of a woman suffering from mitral stenosis in a high degree, who had so long accustomed herself to the use of large doses of digitalis, that, when deprived of the medicine, she fell into a most miserable condition, from which she was relieved, as by magic, by the use of the drug. She used every morning and evening 0.3 grammes of digitalis, and had taken more than 800 grammes in seven years. The case presents a very strong resemblance to the results of long-continued use of morphia.—*Centralblatt für die Medicinischen Wissenschaften*, November 4.

* NEW REMEDIES, v., 356.

Alleged Failure of Salicylic Acid.

AT the meeting of the Société de Thérapeutique, October 11, 1876, Dr. Martineau reported that neither in typhoid fever nor in articular rheumatism did he obtain any influence, either upon the temperature or the pulse, by the use of salicylic acid. This was confirmed by M. Dujardin-Beaumetz, who thought, however, that it calmed the articular pains.

Xanthium Spinosum and Hydrophobia.

AT the meeting of the Paris Société de Pharmacie, on October 4th, M. Yvon described to the Society some experiments that had been made in the school at Alfort, by MM. Trasbot and Nocard, respecting the alleged prophylactic action of *Xanthium spinosum* against hydrophobia. The results had been entirely negative.

Use of Phosphorus in Leucocythæmia and Allied Diseases.

IN view of the extremely intractable nature of these affections, it may be of interest to direct the attention of our medical readers to the discussion which recently occurred in the Clinical Society of London, on the effect of phosphorus upon them. Although the number of cases cited by the various speakers was not large, the success which attended the use of the remedy in a few of them warrants its trial. The report of the discussion may be found in the *British Medical Journal* of Dec. 16th.

Salicylate of Soda in Gout and Neuralgia.

THE statements that have recently been made by several writers, that salicylic acid and salicylate of soda, when given in acute rheumatism, relieve the pain more certainly than the swelling, indicate the trial of these substances in affections where pain may be a chief characteristic. Dr. C. Cunzi (*Deutsche Zeitschr. für prakt. Med.*) recommends salicylate of soda as a means of rapidly relieving the pain of gout. In two cases of gout of the foot a single dose of one drachm was followed, in three hours, by complete cessation of the pain; the swelling, however, remained ten days longer. Dr. L. Hoffmann (*Berliner Klin. Woch.*) has found it remarkably efficacious in gout of the hands and feet, and relates successful cases of its use in sciatica, tic doloureux, and intercostal neuralgia. He recommends half a gramme to be taken in a gelatine capsule every hour.—*Br. Med. Jour.*

Treating Blisters by Osmosis.

M. UNGERER recently saw an extensive scald, which had for twelve hours been treated with cold water without relief from the agonizing pain, or reduction of the swelling. The experiment of immersing the limb in a saturated solution of salt was followed by most surprising relief. The abatement of the pain was immediate, and in four hours both the pain and swelling were gone. The next day the hand differed from the other only by a very slight swelling and redness.

The Use of Santonine in Epilepsy.

An English physician who writes "L. F. P. S. G., L. A. A. Barnsley," after his name, and does it through the courtesy of the editor of the *British Med. Jour.*, reports two patients, aged respectively ten and nineteen, who were relieved of their epileptic attacks by the taking of santonine in doses of one to five grains daily for several weeks.

Large Doses of Ergot.

At the meeting of the American Gynæcological Society, Dr. Drysdale, of Philadelphia, in speaking of the employment of large doses of ergot in the treatment of uterine fibroids, stated that he had given half-ounce doses of Squibb's fluid extract three times a day for more than a year without producing any injurious effects. When the pain caused by the uterine contractions became too severe, the drug was discontinued until the pain subsided.

Nitric Acid for Hoarseness.

Dr. W. Handsel Griffiths says that a few drops of nitric acid in a glass of sweetened water, a couple of times daily, will be found an excellent remedy for the hoarseness of singers. One of the largest fees ever received by him—so he says—was for this prescription.

Agents Affecting the Secretion of the Bile.

Professor Rutherford and M. Vignall have continued their observations on cholagogue drugs. They employed euonymin, sanguinarin, iridin, leptandrin, ipecacuanha, colocynth, and jalap. The animals used for experiment were invariably dogs, and each experiment lasted an entire day. The various substances were always injected directly into the duodenum. 1. In regard to euonymin, it was found that five grains mixed with boiling water powerfully stimulated the liver. It is an active purgative in the human subject. 2. In regard to sanguinarin, three grains, and one grain in two different experiments, mingled with a little bile, powerfully stimulated the liver, but rendered the bile more watery, though more biliary matter was secreted in a given time. The secretion of the intestinal glands was slightly increased. 3. In regard to iridin, five grains mixed with a little bile and water very powerfully stimulated the liver. It is not so powerful as large doses (four grains) of podophyllum, but it is more powerful than euonymin. Iridin is also a decided stimulant of the intestinal glands. 4. Leptandrin is a stimulant, but only a feeble one. 5. Ipecacuanha, when given in doses of sixty grains, powerfully stimulated the liver. Even three grains had an effect on a dog weighing seventeen pounds. The bile secreted was of normal composition, as regards the biliary matter proper. No purgative effect was produced, but there was an increased secretion of mucus in the small intestine. 6. Colocynth is a hepatic stimulant of considerable power. It renders the bile more watery, but nevertheless increases the secretion of biliary matter. It is also a powerful stimulant of the intestinal glands. 7. Lastly, the results of the experiments with jalap showed that the drug is a hepatic stimulant of considerable power. It renders the bile more watery, but at the same time increases the secretion of biliary matter. Its effect on the liver is, however, far less notable than its effects on the intestinal glands.—*The Journal of Anatomy and Physiology.*

Beech-tar Creasote in the Treatment of the Expectoration of Phthisis.

Dr. Georges Daremberg has first made a chemical analysis of the sputa of phthisical patients with great care; he has shown that these sputa may contain almost as large a quantity of phosphates and chlorides as the urine, and that expectoration in these cases is one of the ways by which the products of denutrition are expelled; this expectoration, however, is not only one of the ways, but also one of the causes of this denutrition, which is indicated by precise prognostic and therapeutic data. Beech-tar creasote has been employed in France by M. Bouchard, and in five cases of advanced phthisis the results have been favorable; the expectoration has quickly stopped. From 20 to 40 centigrammes (about 3 to 6 grains) of creasote per diem were given. According to Hlasewetz and Barth, this beech-tar creasote is a combination of creasote ($C_8H_{10}O_2$) with a carburetted hydrogen.

Pain Produced by Chloral Hydrate.

Referring to the note of Dr. Herbert Morgan (a synopsis of which will be found on page 334 of New Remedies of November), W. H. De Witt, Physician to Longvine Asylum, says that in an asylum practice of five years, during which his experience with chloral hydrate, both as a hypnotic and a quieting agent, has been large, he has seen no bad effects resulting from its administration. Instances occurred in which doses of twenty to thirty grains were given every one, two, or three hours for months in succession. Many of the evils supposed to arise from the use of this drug he believes to be in great measure imaginary, or due to causes more or less obscure.—*Cincin. Lancet and Observer.*

Iron as a Reconstructive Agent.

M. Dujardin-Beaumetz is not a believer in the therapeutical virtues of iron in anæmia and chlorosis. Notwithstanding the existence of a lessened quantity of iron in the blood of anæmic and chlorotic patients, he says that this diminution is of very little consequence, being ten to twenty centigrammes at the most, of the total amount of two grammes of iron in five litres of the blood of an average-sized adult. Now, according to Boussingault, the daily food introduces into the body ten to twenty centigrammes of iron; consequently, the loss of iron may be made up by the food alone. Therefore, instead of supposing the mineral tonics to replace directly what the blood lacks, it is much easier to believe, he says, that these act in anæmia simply as stimulants; and in order to enrich the blood we should have re-

course to those medicinal agents which excite nutrition.

In young girls, M. Beaumetz is much better satisfied with gymnastic exercise and hydrotherapy than with ferruginous medicines. Moreover, if the latter are oftener powerless in chlorosis, they produce harm by disturbing the digestive functions. Arsenic is more valuable than iron.—*Boston Med. & Surg. Jour.*

Lactic Acid as a Hypnotic.

On the 15th of March, Herr E. Mendel read a paper before the Medical Society of Berlin, on the Hypnotic Properties of Lactic Acid, and referring to the observations of Preyer and Lothar Meyer on this subject, he said that its effects, when administered by the mouth, either pure or in the form of the lactate of soda, were uncertain, but he had found very good results from its use in enemata in a large number of cases. The dose of lactic acid which he recommended was five to twenty grammes (75 to 300 grains) mixed with an equal quantity of lactate of soda. The use of lactic acid was especially recommended: 1. In cases of insomnia in the course of debilitating diseases, or during convalescence from them, after hemorrhages, etc. 2. As a calmative in the excitement of the insane; 3. As a remedy in certain psychoses, in regard to which its precise indications must yet be determined.

In a discussion which followed at the next meeting, Herr Senator said that he had used lactic acid, either in divided doses, two grammes (155 grains) being given in the course of a day; or in single doses of five to ten grammes in gaseous water, or as lemonade. With the first-named mode of administration no sleepiness was observed. On the other hand, a large single dose produced pure sleepiness, although lactic acid could not be compared, as regards strength or duration of action, with morphia or with chloral hydrate. There was, however, a troublesome after-effect, which had not been noticed by Herr Mendel or by Lothar Meyer—the occurrence of rheumatic pains; these he had observed twice, once in a phthisical patient, the other time in a man who had frequent attacks of muscular rheumatism. Rheumatic pains had also been observed in giving lactic acid with other objects, such as the treatment of diabetes, etc.

RECENT PAPERS.

Liebig's Annalen der Chemie. 183, 1, 2, 3.

W. Hampe: "On Boron." [As is well known, Wöhler and Deville obtained what has been called boron-diamonds, that is, a variety of metallic boron, crystalline, of a dark brown or black color, and only inferior to the diamond in hardness. Hampe now finds that these crystals are a compound of boron and aluminium, AlB_{12}, and that the other variety of boron, which already Wöhler and Deville had found to contain aluminium (by aid of which they are prepared), contains carbon in addition to boron and aluminium.]

Gorup-Besanez: "On Ostruthin." [The root of *Imperatoria Ostruthium*, master-wort, contains several crystallizable substances, one of which, imperatorin, has been known for some time, and found to be identical with peucedanin. The other was discovered by the author a few years ago, and named ostruthin. It is odorless, nearly tasteless, insoluble in cold, nearly so in boiling water, little soluble in benzole and petroleum ether, easily soluble in alcohol or ether. The alcoholic solution is faintly *fluorescent*, but on mixing it with water it assumes a *magnificent blue fluorescence*, only comparable to solutions of æsculin.* It is optically inactive. By fusing it with caustic potassa it is split up into several bodies, one of which was recognized as *resorcin*.]

E. Frey: "On the Metals Calcium, Strontium, Barium, and Lithium." [In the chemical factory of Dr. Schuchardt, in Gorlitz, these metals are prepared on a much larger scale than elsewhere. Samples of them, from 2.5 to 4 gm., were exhibited at Philadelphia. *Calcium* is not of a bronze color, but looks exactly like aluminium. *Strontium* has a bright bronze color. The former is very brittle, the latter quite ductile and malleable.]

The Analyst.

November. Dr. Muter: "A Method of Detecting Castor-Oil and other Fixed Oils in Balsam Copaiva." (See p. 11.)

L'Union Pharmaceutique.

November. Da Silva Lima: "Pharmacology of Araroba or Goa Powder." [The author states that in his practice the preparations which were found to answer best were the pomade and the vinegar.] (See p. 28.)

Répertoire de Pharmacie. Nos. 20–22.

Ch. Ménière: "Artificial Coloring of Honey." (See p. 2.)

L. Portes: "Researches on Sweet Almonds." (See p. 2.)

Pharmaceutische Zeitung für Russland. No. 21.

S. Wasilewsky: "Contributions to the Medico-Legal Research for Hyoscyamus, Stramonium, and Belladonna." [The author finds that chloroform is a much better solvent of the alkaloids of these plants than benzine or ether. But chloroform cannot be used to purify, by shaking, the *acid* solutions of the alkaloids from foreign bodies, as it takes up a portion of the alkaloid. In extracting the alkaloids themselves, their solutions must be made slightly alkaline, and shaken with chloroform.]

Archiv der Pharmacie.

November. Th. Husemann: "On the Distribution of Cardiac Poisons in the Vegetable Kingdom." (See p. 3).

R. Godeffroy: "On some new Reactions for Alkaloids." [The author has examined the behavior of a number of alkaloids towards metallic chlorides, with the following results:

Solution of ferric chloride in hydrochloric acid produces, in not too dilute hydrochloric solutions of aconitia, strychnia, and veratria (and also of piperin), yellowish red precipitates.

Atropia, quinia and cinchonia likewise give precipitates, but the latter are redissolved on adding an excess of the precipitant.

Brucia, coffeia and morphia are not precipitated.

All these precipitates are compounds of 1 mol. of ferric and 2 mol. of alkaloid chloride; they are soluble in water, and, in the case of the first mentioned, can only be washed with strong hydrochloric acid.

Solution of antimony trichloride in hydrochloric acid and solution of stannous chloride produce similar precipitates. The former does not precipitate coffeia or morphia. The latter precipitates morphia, but not coffeia; and the morphia precipitate is very little soluble. Its composition is: $Sn\,Cl_2, C_{17}K_{19}NO_3HCl$.

The most sensitive of all alkaloidal reagents, however, appears to be silicotungstic acid. (See next number.)

E. Reichardt: "Black Phosphorus and Presence of Arsenic in Commercial Stick-Phosphorus." (See p. 8.)

* Or so-called gelseminic acid; see this journal, v., 342.

E. DUMAS: "On the Touchstone." [The true touchstone is a fossil wood, derived from a dicotyledonous plant, nearly allied to the genus *Rosthornia* Ung.]

Pharmaceutical Journal and Transactions. Nos. 335–338.

J. C. TRESH: "Solvents of Salicylic Acid." [The author, in the course of the paper, gives the following table of the solubility of the acid in potassium citrate solution:

Sal. acid	1	Citrate	.75	Water	100.
"	1	"	1.	"	50.
"	1	"	1.15	"	25.
"	1	"	1.25	"	20.
"	1	"	1.4	"	12.5
"	1	"	1.5	"	7.5

ALF. BALKWILL: "The Dispensing of Copaiba Resin." (See formula, p. 28.)

CHAS. T. KINGZETT: "The Hygienic Influences of the Pine and Eucalyptus." [The anti-malarial powers of the pines and eucalypts is most likely due to the fact that the hydrocarbons which both contain as volatile oils are constantly being oxidized by the atmosphere into hydrogen peroxide, which is one of the most powerful disinfectants known.]

W. DYMOCK: "Notes on Indian Drugs." [*Suckmuniya* or Bazar scammony. That sold in Bombay is all fictitious, and said to be made at Surat.—*Canna Indica, C. lutea, C. discolor;* local name kimuski. Canna lutea is said, in the 'Bombay Flora,' to be the source of tous-les-mois, and it corresponds with it exactly; but the official canna is never prepared there.—*Mangifera Indica*, local amba; the gum is black, friable, and soluble in water.—*Garcinia* species? Canarese name: Arasina gurgi. This native gamboge appears to have been collected upon leaves, portions of which still adhere to it. It is very impure.—*Aloe* spec.? local elia. There are many qualities of aloes met with at Bombay. Excluding socotrine, the kind most worthy of notice is the *Jafferabad Aloes;* it is manufactured at a town of that name on the Kattiawar coast, belonging to the Hubshis of Jinjeera, a family of African origin. Mr. Dymock has not been able to get an authentic specimen of the plant. The drug in mass is black; it has a glossy fracture; the powder is dull yellow, and the odor powerfully aloetic and aromatic. It affords a fair yield of aloin by Histed's process. Its reactions are the same as barbaloin (aloin of Barbadoes aloes).—*Calophyllum elatum*; local, sirpoon. The gum is black and opaque; soluble in water to a yellow-brown solution, *exhibiting a strong blue fluorescence*, which is greatly increased by throwing down some of the brown coloring matter by alum. When purified in this manner, the solution instantly loses its fluorescence on addition of an acid, and regains it on addition of an alkali.*]

ALEX. BOTTLE: "A New Mode of making Gray Powder." [Suggesting, in place of trituration, active agitation of the mercury and chalk in a wide-mouth bottle. This process is not new in this country. Dr. Ed. J. Coxe, of New Orleans, first proposed this method, called succussion, and Dr. Ed. R. Squibb modified it by adding to the ingredients about one-seventh of their weight of honey, and making the chalk into a paste with water; the saccharine matter effectually prevents oxidation.]

S. C. BETTY: "Composition and Uses of a new Bismuthic Compound: Oleate of Bismuth." (See p. 7.)

J. WILLIAMS: "Note on some Reactions of the Glycerole of Nitrate of Bismuth." [Mr. Balmanno Squire having ascertained that glycerine is capable of dissolving 20 per cent. of nitrate of bismuth,† the author supplements this information by stating that caustic potash or soda, added to the glycerole diluted with water, first causes a white precipitate, which dissolves in an excess of the alkali, producing a bright, clear liquid perfectly miscible with water in all proportions. The glycerine appears to play the same role in this mixture as citric acid does in liquor bismuthi. Ammonia cannot be employed instead of potassa or soda. Ordinarily, bismuth oxide is insoluble in an excess of an alkali.]

* Compare also the properties of fluorescēine (aniline-derivative), mentioned on p. 18.

† See NEW REM., v., 361.

W. MARTINDALE: "Crystallized Hyoscyamine." [In the course of the paper the author pointed out that the so-called amorphous hyoscyamine, with which Mr. Rob. Lawson has experimented (see NEW REMEDIES, v., 240), was in reality minutely crystalline.]

J. C. THRESH: "Note an Capsaicin." [This substance, the supposed active principle of capsicum, discovered by the author, has been analyzed by Dr. Buri, Prof. Flückiger's assistant, who found figures corresponding most nearly to the formula $C_9H_{14}O_2$.]

BALMANNO SQUIRE: "Chrysophanic Acid Ointment." (See February number.)

T. F. HANAUSEK: "On Paraman-Resin." [The resin of *Monorobœa coccifera*, Aubl., nat. fam. Guttiferæ, native of Venezuela. In Brazil the resin is called "anani," at the Paris Exhibition it was named "résine mani en pairs," and according to Macfadyen's Flora of Jamaica, it is also called mani, manil, or hog-gum.]

Pharmaceutische Centralhalle. Nos. 44–46.

"Carrageen-Wadding." [See p. 7.]

Journal de Pharmacie et de Chimie.

September. A. HALLER AND E. HECKEL: "On Potalia Amara." [*Potalia amara*, Aublet, is a shrub or small tree belonging to the natural family of Strychnaceæ, nat. of Guiana and Cayenne. The authors found the bark to contain a bitter principle, differing from strychnia and brucia, and producing emesis in very small doses.]

Chemical News.

S. KERN: "Production of Carbon Monosulphide." [If iron wire is digested for about six weeks in carbon disulphide, the iron abstracts one-half of the sulphur, becoming ferrous disulphide, and carbon monosulphide is formed, which is left as a reddish brown powder upon dissolving the iron disulphide in hydrochloric acid.]

C. A. CAMERON: "On Mercuric Iodate." [This salt is precipitated when alkaline iodates or iodic acid are added to mercuric acetate or nitrate, but not when added to the chloride. It is soluble in alkaline chlorides, bromides, iodides, cyanides and cyanates; in dilute solutions of manganese and zinc chlorides; in sodium hyposulphite and in hydrochlōric acid. It is insoluble in solutions of potassa, soda, ammonia, sodium sulphite, borax, corrosive sublimate, the officinal sodium phosphate, alkaline iodates, chlorates and bromates, and in acetic, fluoric and silicofluoric acids.]

Berichte der Deutschen Chemischen Gesellschaft. Nos. 16–17.

ED. LIPPMANN AND JOSEF HAWLICZEK: "On Artificial Oil of Bitter Almonds." [The authors have made exhaustive researches on the identity of the artificial with the natural oil, and have found the two oils absolutely identical, physically as well as chemically.]

E. V. GERICHTEN: "On Apiol." [During the preparation of oil of parsley by distilling the seeds with water, there is obtained, besides the peculiar terpene, a body which separates in fine needles, and is known as parsley-camphor or apiol. Homolle and Joret apply the name of apiol to a mixture of various bodies, which they obtained as a greenish brown oil, by extracting parsley-seed with alcohol and ether, and treating with lead oxide. They recommended this apiol as a substitute for quinia. The name *apiol* may be retained, but should be restricted to denote the crystalline ethereal oil, that is, the parsley-camphor. This body may be extracted directly from the seeds by exhausting them with alcohol, distilling off the latter and digesting the residue with ether; apiol is dissolved, while apiin remains behind. Pure apiol forms very long, white, brittle needles of a faint parsley odor; its melting point is 30° C., boiling point 300° C., and spec. gravity 1.015. Probable formula $C_{12}H_{14}O_4$.]

B. TOLLENS: "On an Improvement of Bunsen's Filter-pump." [The principle and use of this apparatus may be presumed to be known to our readers. In order to remedy the drawback of not being able to observe the flow of water on first starting the apparatus, the author has modified this portion of the apparatus, by carrying the water-pipe from

above downwards, and using the lateral tube as air-exhauster.]

SAME: "On the Noxiousness of some Rubber Goods." [Attention has repeatedly been drawn to the noxious properties of rubber articles which contained admixtures of injurious substances, especially zinc oxide. This substance used to be a common constituent in rubber nipples, or in the caps of feeding-bottles, but has not been used of late years in consequence of the evil effects produced by it. But other rubber articles, such as children's toys or dolls, frequently contain large quantities of it. The author found in one doll 60.58 per cent., and in another 57.68 per cent. of zinc oxide, the presence of which was suspected by the effects produced upon children who had kept them in protracted contact with their mouths.]

SAME: "Constant Generator of Chlorine, Ammonia, and Hydrochloric Acid." (See p. 6.)

FR. KRÜGER: "Fluoresceïn as Indicator for Acids and Alkalies." [According to the author, this new aniline compound exceeds all other substances in sensitiveness for acids or alkalies. The least trace of acid destroys immediately all trace of the magnificent fluorescence, while free alkali at once restores it. *It is entirely indifferent towards carbonic acid.* But it is inapplicable in presence of free acetic acid, which does not destroy its fluorescence; nor when finely divided white precipitates are suspended in the liquid, as the fluorescence is then masked, and the precipitate would have to be allowed to settle before employing the reagent.]

JUL. JOBST: "On Coto-Barks and their Crystallizable Constituents." [A new supply of coto-bark, which the author obtained lately (see our December number, p. 360), yielded an alkaloid apparently identical with true cotoïn in its external characteristics, but differing from it in its chemical behavior. The name *paracotoïn* is proposed for this body. In addition to it, the new bark contains other crystallizable principles in smaller quantity. This paracotoïn is devoid of the biting taste of true coto-bark, does not strike a red color with strong nitric acid, but merely forms a yellow solution, and basic lead acetate solution does not produce a precipitate. Complaints directed to the exporting-house in Bolivia elicited the reply that this invoice represented the best coto-bark in the Bolivian market, and was obtained from the banks of the river Mapiri. Dr. Burkart made some experiments with paracotoïn, at the request of the author, and found that this body possesses nearly the same specific anti-diarrhœic properties as true cotoïn, being only very slightly inferior to it, owing, no doubt, to its difficult solubility. Coto-bark appears to occur in different qualities, like cinchona barks; some probably contain an excess of cotoïn, others of paracotoïn.]

VICTOR MEYER: "Apparatus to Demonstrate the Increase of Weight during the Burning of a Candle." [In order to demonstrate the increase of weight resulting from the union of atmospheric oxygen with the constituents of a candle, the author has constructed a very simple apparatus. A piece of a candle, about 45 mm. long, is placed upon each scale-pan of a balance; over each candle hangs a glass cylinder filled with large pieces of caustic soda resting on a wire diaphragm. After both sides have been brought into equilibrium by proper adjustment of weights, the candle on *one* of the scale-pans is lighted, and in a few minutes already there will be noticed a considerable increase of weight on this side, owing to the absorption of water and carbonic acid by the soda. The candle and soda cylinder on the other side are placed there to obviate the supposition that the increase of weight on the side of the burning candle was owing to abstraction of water and carbonic acid from the air.]

W. R. HODGKINSON AND W. C. SORBY find that by heating colorless hairs and feathers with dilute sulphuric acid, they dissolve completely. But by treating black hair or feathers in the same manner, a black substance remains behind, which was found to have the composition $C_{15}H_{16}N_2O_8$, and which is also met with in dark red and brown hair, and in iridescent feathers.

Amer. Journal of Pharmacy.

November, December. E. L. BOERNER: "On the Seeds of Ricinus Communis." [The author examined the marc left after the manufacture of the oil. In the course of his experiments he found that carbon disulphide, ether, and gasoline still extracted some oil from the marc, the first mentioned as much as 11.77 per cent. A portion of exhausted marc was macerated with water until decomposed, and then distilled; the distillate was found to contain butyric acid. A crystalline substance was likewise obtained, which was proved not to be an alkaloid.]

N. ROGERS: "Sium Latifolium." [Contains an alkaloid probably analogous to pastinacina, one indifferent and two acid resins, sugar, albumen, gum, and salts.]

PH. H. DILG: "On the Root of Euphorbia Ipecacuanha." [This officinal drug is unobtainable in the market. Instead of it, *Gillenia stipulacea* is usually supplied. It should be dropped from the U. S. Ph.]

R. V. MATTISON: "Preparations of Malt." [Coarsely ground, properly malted barley, is macerated in a wooden tub with water at a temperature of 168°–172° F. About fourteen gallons of water are used for half a bushel of malt. During the maceration, which lasts three or four hours, the temperature should not fall below 150° F. The solution or wort is then run off, the barley washed with a spray of hot water, and the whole of the liquid transferred to capsules or copper kettles, to be evaporated on a water-bath. The utmost care must be taken to have all vessels scrupulously clean. A mixture of extract of malt and cod-liver oil combines the nutritive value of the latter with the assimilating properties of the former. The author also states that a mixture of equal parts of cod-liver oil and extract of malt is pleasant to take, permanent, and may be mixed with water without separating the oil.]

Pharm. Centralhalle. Nos. 35–40.

COMPOSITION OF SECRET OR PATENT REMEDIES.—From this list, comprising about 160 nostrums, which have been examined since Sept., 1874, we select those stated to occur in our own market, or to be exported from this country:

Borwick's Baking Powder is a wrongly-adjusted effervescing powder, mixed with Indian meal. (Gaedike.)

Johanna Gerlitz's Bitters (Philadelphia): caraway, fennel, lily of the valley (root), absinth, wild cherry bark, orange peel, lavender, alcohol, and water.

Radcliffe's Great Remedy; Seven Seals, or Golden Wonder: 4 gm. ether, 6 gm. chloroform, 0.4 gm. camphor or camphor-like oil, 2 gm. oil of peppermint, 35 gm. tinct. capsici, 50 gm. alcohol. (Hager.)

Arnal's Harlem Oil: equal parts of the oils of juniper-wood and juniper-berries. (Vial.)

W. Hollon's Remedy for Headache: ammoniacal spirituous extract of gentian, with aromatics, potassium bromide, and tincture of lupulin.

W. Taylor's Remedy for Cramps and Epilepsy: potassium bromide, ammonium bromide, extract of valerian, rum, and water.

Radway's Regulating Pills: 0.5 gm. gamboge, 2 gm. aloes, 1 gm. jalap, 0.6 gm. of an indifferent powder in 30 pills. (Hager.)

A remedy for incontinence of urine is mentioned, which consists of a vial of almond oil, to be used externally, as an embrocation of the pubes; the other was found to contain equal parts of "day-urine" and dilute alcohol! The manufacturer afterwards declared this analysis incorrect, and gave the composition: water, alcohol, and 0.1–0.2 gm. of extr. belladonnæ for every 50 gm. of vehicle.

SCHELENZ: "Control in the Delivery of Medicines." [In order to diminish still further the chances of a possible mistake in delivering medicines ordered on prescriptions, to customers, the author has had wood-clamps made with large numbers, each corresponding with tin-checks, bearing the same number and the name of the firm. The prescription is placed into the clamp, and the check delivered to the customer, who receives the medicine on the delivery thereof.]

G. HEIL: "Examination of a Spurious Bees-wax." (See November number.)

J. VOLHARD: "New Method of Silver-Titration." (See November number.)

NEW REMEDIES.

AN ILLUSTRATED MONTHLY TRADE JOURNAL OF

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FRED'K A. CASTLE, M.D., - - EDITOR.
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PUBLISHERS' NOTICES.

THE edition of NEW REMEDIES this month is 10,000 copies.

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EDITORIAL.

THE movement among the physicians of New York City, in favor of the use of the metric system in prescriptions appears to be growing, the largest number of its advocates being among the younger men, as might be expected. There is reason for thinking, however, that the system would be used even more generally if physicians could be assured that apothecaries had provided themselves with the necessary weights; and we are glad to report that an effort is being made to have one of our leading scale-makers undertake the manufacture of sets of metric weights which will not only be reliable, but so moderate in price that apothecaries need not hesitate to purchase them for fear of investing in a thing which they may rarely be called upon to use. Whether the metric system is or is not adopted, however, the editorial articles which appeared in recent numbers of the *Medical Record* (Dec. 9th, 16th, 23d, and 30th), a quotation from which may be found among our News Items, show that some improvement is urgently demanded in the quality of the weights in use.

IN commencing the VI. volume of NEW REMEDIES, we have made a few changes and additions, which we hope will improve the character of the journal and render it more valuable in every respect. The introduction of illustrations will enable us to publish articles of practical interest which we were formerly obliged to pass over, or simply refer to; and to accomplish this without lessening the amount of text, the letter on the "New York Drug Market" has been printed as an extra.

With few exceptions we have heretofore made little effort to secure original communications, believing that the interests of the greatest number of readers could be served by making each issue contain, as far as possible, a résumé of the matter to be found in our exchanges. The rapid and considerable increase in the number of its readers, however, renders NEW REMEDIES one of the best means for reaching the attention of the class for whom it is published, and while still making the abstracts of articles in other journals the chief feature of this one, we have determined to admit some proportion of original matter.

ORIGINAL COMMUNICATIONS.

JAPANESE MEDICINE AND PHARMACY.

THE peculiar geographical position of Japan, together with its intimate and for many centuries exclusive intercourse with China, have been the means of transplanting many branches of knowledge and various useful arts from the latter country to the former; among these, Japanese medicine is entirely based upon Chinese authorities, and although European science, thanks to the enlightened liberality of the present government, is gradually making progress, the bulk of the native practitioners still adhere to the old tenets.

Tradition speaks of a time when there existed a native Japanese system of medicine, but no traces have remained of it, and for more than 2000 years all medical and pharmaceutical knowledge of the Japanese has been derived from Chinese sources. The latter, contrary to what might be expected from the copiousness of literature in other branches, are exceedingly few and scant, and consist mainly of these two works:

1. The *Shookánron* ("Doctrine of the Febrile Diseases"), which was composed about 350 B. C., by Tchoochúke, the Chinese Hippocrates.

2. The *Kinki* ("Golden Chest"), which treats of all diseases excepting fevers.

But it must not be supposed that the Japanese practitioners were exempt from the natural tendency to opposition, which in more civilized countries has showered upon us a harvest of "pathists" too long to enumerate; on the contrary, in olden times already there arose a schism between the followers of the fever-theory of the Shookánron,* and the champions of the other school, which recognized both works. The former, who were specialists in our sense of the word, maintained that the treatment of all diseases, febrile or otherwise, may be learned from their authority, while the latter, being more progressive or liberal, acknowledged the authority of both, and even ascribed the authorship of the Kinki to Tchoochúke himself.

Besides these two principal works, the liberal school recommend a number of other Chinese books, for the study of medicine, the importance or authority of which is considered to increase with their age. The principal ones are:

1. *Sómon*, that is, "Catechism of Soko," an omniscient deity, who gives answers to questions put to him by Hoanti, the son of Hohi,† on human diseases. It is interspersed with philosophical, physiological, and anatomical disquisitions.

2. *Réïssu* ("Holy Centre"), likewise very old, and of similar contents.

3. *Honzo*, a materia medica of more modern origin, about 200 years old; it treats of the remedies arranged according to the three kingdoms of nature, giving a description of their physical and external forms and characteristics, and an account of their therapeutic use. Besides those remedies, which are used in China exclusively, some others, not Chinese, are treated of in this work, as opium, asafœtida, gentian, sal ammoniac, etc.

4. *Ungekiron*, a treatise on pestilence, about 200 years old; of much inferior authority.

Chinese books of less age than about 200 years are looked upon as devoid of all authority, and in general no work is adopted as a standard until it has stood the test of time in China for several generations.

The introduction of European medical science into Japan, which met with but little success before the beginning of this century, may be said to have begun with the labors of Dr. von Siebold, who, with the consent of the Japanese Government, instructed a number of natives privately in natural history, and who also succeeded in introducing vaccination into Japan in 1824. His labors were continued by his successors at Desima, until the government established a regular medical school at Nagasaki in 1857, which was followed by another at Ozaka in 1872; the latter, however, was afterwards incorporated with the medical department of the University at Tokio. But, although much progress has been made to disseminate European medicine among the medical practitioners of Japan, it is useless to expect much improvement until the learning generation shall have taken the place of the practising one.

It has been stated that the main source of knowledge of materia medica is the Honzo. But in reality there are three works, which supplement each other, and of which the first may be termed Honzo—*κατ' ἐξοχήν*.

1. *Hon-zo-ko-moku* (Chin. *Pun-tsao-kang-muh*).
2. *Hon-zo-ko-moku kei mo.*
3. *Yamoto-hon-zo.*

The first is originally a Chinese work, begun at the command of the Emperor Kea-tsing, by the celebrated Le-shechin, and after his death completed by his son, in 1596. It is very voluminous, consisting of fifty-two portions, generally bound in forty volumes, with two or three volumes of maps. The first two parts contain an introduction and general practical rules on therapeutics: pp. 3 and 4 give a general summary of remedies, p. 5 describes various forms of water, p. 6 those of fire, p. 7 the earth, page 8 the metals and gems, pp. 9 and 10 minerals in general, p. 11 saline minerals and salts; parts 12 to 38 describe medicines derived from the vegetable, and parts 39 to 52 those derived from the animal kingdom. The maps contain about 1,200 figures. It describes altogether 1,890 remedies, and is said to be a compilation from more than 800 authors on materia medica and medicine, executed by order of the emperor, and, up to within a short time ago, the recognized official authority. The first Japanese edition appeared at Yeddo in 1714, being edited by Ina Wakasui.

The second of the above-named works, Hon-zo-ko-moku keï-mo ("The Honzokomoku's Obscurity-Dispeller"), is a commentary on the first work, composed by the well-known Japanese botanist, Ono Ranzan and published in 1804, simultaneously at Kioto and at Yeddo; again in 1847. His descriptions are remarkably accurate, and his work may be considered as a pharmacognosy of Japan. It consists of 48 parts, generally divided into 31 volumes.

The third work, the Yamoto-Hon-zo was composed in 1709, by Kai-Bara, and printed in Kioto. It is a handbook of the natural history of Japan, and of purely Japanese drugs. It makes no allusion to therapeutics. It consists of sixteen parts in eight volumes, with a supplemental volume, and a volume of botanical plates, which, however, like those of the Hon-zo-ko-moku, are often very inaccurate.

The system of native medical education hitherto in vogue, and still followed in Japan, is based on a sort of apprenticeship; one class of pupils entering the house of their preceptor as "free" scholars, but paying for their education and support; another class entering the service of their preceptor, and for the sake of the instruction received or expected, doing all sorts of menial offices, as compounding medicines, bathing the sick, acting as errand-boy or nursery-maid, etc. The "free" scholars may devote their whole time to study, generally pay an entry fee of ½ rio*, and offer presents every six months. All pupils must possess the necessary preliminary knowledge, which consists in being able to read and write Chinese fluently, to know Chinese history, and to be able to make prose and poetical compositions in Chinese. As all the standard medical works are written in Chinese, and only such a course of study as the above mentioned can give sufficient knowledge of this language, no student can be exempted from it. The pupil must be at least sixteen years of age when entering. He is at once given the Shookánron for study, which, as before stated, is the exclusive authority of the Old School (Kohō), while the disciples of the New School (Kōsse, "post-mundane") have to study also the other standard works.

The practical or clinical instruction consists merely in the permission to be present during the consultations or

* The translation of the Shookánron, without comment, would scarcely fill 100 octavo pages.

† The reputed founder of the Chinese empire.

* 1 rio = $1.05; 1 rio = 4 bu (itzebu); 1 rio = 60 momme; 1 momme = 10 fun.

visits of the teacher, who never gives explanations of his diagnosis, but whose manners, mode of manipulation, demeanor, and consolatory discourse, must be acquired by mute observation and unaided imitation. At the end of such a séance, the teacher dictates to one of the pupils, whose special duty this is, a number of receipts, with number and name of patient, into a large prescription-book, which is generally copied by all the pupils. The amanuensis also prepares every prescription, at which occasion he proceeds with a great deal of leisure, as it is considered more conducive to the reputation of the physician to have patients detained in his house for a long time, such as half a day or more. At the end of two years' instruction, the pupils are declared competent, when the "free" or paying scholars generally go to Tokio (Yeddo), or Kioto (Miako), or Nagasaki, for further study, while the "bonded" pupils have to give their services as assistants for another year to their instructors.

It would lead us too far to give here an account of their theories and speculations regarding the origin and division of diseases, or their explanation of the mode of treatment. Suffice it to say that their chief observations are made upon such symptoms as call for the employment of any of their four chief classes of remedies: diaphoretics, cathartics, emetics, and narcotics.

Most of their remedies are of vegetable origin, the most important, according to the Honzo, being the following:

Nindjin, a species of carrot, valued as a panacea, and sold at the rate of about eight dollars per oz. It is cultivated in Japan, but, like many other remedies, must be sent first to China and then reimported, to be of value. It must be administered in very large doses, whence only the rich can afford to be "cured" by it.

Buschi, root of Aconitum Chinense, used in paralysis and generally all nervous diseases.

Natural pearls, whole or powdered, used in ophthalmic affections.

Bear's bile, considered nearly equal to nindjin, and very expensive.

Musk and *camphor*, important nervine remedies.

Goo, or dried bullock's brain; a favorite remedy in infantile convulsions.

Retengai, pieces of decayed human skulls, considered of value in the treatment of phthisis.

Tatsuno otoschingo ("Posthumous Son of the Dragon") are dried salamanders, being the principal remedy in infantile marasmus and diarrhœa.

Sad-juzu (Atractylodes lancea), and

Biaku-juzu (Atractylodes nova), are both much used as antifebrile remedies.

Kobusi (Cyperus rotundus), used as diaphoretic and antispasmodic.

Biwa (Eriobotrya Japonica), important prophylactic against summer complaints.

Nindōō (Lonicera Japonica), universal remedy against skin diseases. A decoction of it is used externally.

Botan (Paconia moutan) is considered abortive. It is, however, not used as such, but is forbidden to be eaten by pregnant women.

Boscho (Sodium sulphate), used as cathartic.

Daio (Rhubarb), the principal cathartic and laxative; termed "the king of all remedies;" only "daio" is believed to be powerful enough to expel all poisons from the body.

Kuatté (powdered flowers of a species of melon), used, in large doses, as emetic.

Mao, a graminea, used in decoction as diaphoretic.

Opium has been introduced in more recent times.

Much used are besides: *Hakko* (Mentha piperita), *Dsiō* (Melissa), *Uikio* (Pimpinella anisum), *Seisin* (Asarum Canadense), *Intsin* (Artemisia capillaris), *Dokkatzu* (Aralia edulis), *Nikkei* (Cinnamomum Loureiri), etc.

The form in which remedies are exhibited is considered to be of great influence upon their effect. They are mostly compounded according to general directions contained in the Shookánron and Kinki, only modified by leaving out, substituting, or adding certain articles, for special purposes.

Decoctions are the most common form of administration; they are generally prepared by the patient or his attendants, from material furnished by the physician, and unless specially interdicted by the latter, always prepared with the addition of ginger, "which is considered to guide them to their appropriate place in the body." Other common forms of remedies are confections, prepared from honey and vegetable powders; suppositories, already recommended by the standard old authorities; powders and pills; ointments, prepared from mutton-tallow, oil, and vegetable powders; and plasters, prepared from litharge, oil, and turpentine.

Medicines are generally weighed, the more costly ones always; ordinary remedies are often measured out with little spoons. But this is always done in the physician's "dispensary." There are no apothecaries in Japan, only dealers in simple drugs, or certain standard compounds, which are sold to the people at large, or to physicians, who alone know how to compound a complicated recipe. The necessary remedies for sudden emergencies are carried by every practitioner in the *Inroo* ("stamp-keeper"), a box containing four compartments, and carried on a string fastened to the girdle over the right hip. In one of these compartments must always be contained a mixture termed *Kitzuke* ("recalling power"), consisting of storax, honey, musk, camphor, cloves, terra japonica, incense, etc. This is given in all dangerous attacks, as syncope, angina pectoris, convulsions, palpitations, etc. Another compartment contains dried bear's bile, which is also considered as highly effective in convulsions and other diseases. The other two spaces are filled according to the practitioner's own fancy.

The choice of remedies depends upon the result of the diagnosis. The latter is made chiefly from an examination of the pulse. A skilful physician is expected to correctly recognize and prognosticate the disease, without oral inquiries, merely from an examination of the pulse. The medical authorities contain a minute and detailed exposition of the variations of the pulse and its relations to various diseases, and show in this particular, as in many others, much relationship to the systems of medicine in vogue among the ancient Hindus and Greeks.

In the following we append a summary of the contents of parts 5, 6, 7 and 8 of the Japanese pharmacopœia contained in the Honzo.*

Rain-water (especially collected during spring), lake-water, dew-water, moon-water (collected under the rays of the moon on a metallic mirror), hoar-frost water, snow-water, hail-water, ice-water (among other uses recommended, mixed with Ama-sake, for "Katzenjammer"), bambus-water, water drained through old roofs (considered poisonous; used as an antidote for mercurial poisoning, or against rabies), river-water, well-water (considered injurious, and avoided for the preparation of tea, which becomes dark-colored), well-water collected on the first day of the first month, or the second day of the second month, etc., sweet water from Mino and Omi, water containing bicarbonate of calcium (niyu ketsu), warm mineral water (no less than two hundred and forty-nine mineral springs are known to exist in Japan; some of these of considerable richness in important therapeutic constituents), sea-water brine (used in scabies), spring-water from rocks, putrid water collected about old posts, water from corpses (collected by placing empty cups into the coffins, and withdrawing them after the decomposition of the cadaver; used internally in mania, and also externally), water through which snakes have passed, vinegar-water (prepared by allowing a decoction of millet and awa to undergo fermentation), condensed water (from rice-boilers), water boiled in copper kettles, grindstone-water, pigsty-water (antidote against poisons), water in which new-born infants have been washed, rain-water collected in empty bladders ("the patient must not know the *origin* thereof"—which caution we should imagine would be applicable to many other remedies in their catalogue), and various others. The succeeding part of the work contains an account of various form of fire and agents for combustion: male fire (actual burning fire), female fire (all phenomena of phosphorescence, or luminousness without

*Cf. *Mittheil. d. Deutsch. Ges. f. Natur- u. Völkerkunde Ost-Asiens*, No. 3, Yokohoma, 1874.

actual flame), fire produced by friction of wood (supposed to be only obtainable from *Retinispora obtusa*, or Hinoki, and *Meliosma rigida*, or Yama biwa), wood-charcoal, charcoal of various kinds of wood (much used in large lumps or logs, for the absorption of noxious vapors or effluvia in houses); moxa-fire (the leaves of Artemisia Chinensis, pounded and dried and placed upon affected portions of the body, where they are ignited; moxas are much in use as counter-irritants, and in rheumatic or gouty diseases); actual cautery (highly esteemed in rheumatism; it consists of round or square iron plates of about three square inches, with a central handle); lamp-fire, burnt wicks, native coal; petroleum (sekinoyu; besides the usual industrial applications, it is used for preparing a special kind of lampblack, which is said to give to the better grades of Japanese and Chinese India inks their peculiar lustre); soot. Then follow: sulphur (iwo; crude or sublimed), rock-crystal, amethyst, river sand, quartz, agate, chalcedony, opal, obsidian, pumice (decoction in diabetes), arrow-points from the stone period of Japan, and a number of petrefactions.

It would have led too far to mention all the diseases for which these various remedies have been used; but at a future occasion, should we find space to continue the *résumé* of the contents of the Japanese Pharmacopœia, we shall add the necessary therapeutical remarks, when deemed of interest.

CH. RICE.

NOTE ON OLIVE CULTURE AND OLIVE OIL IN GREECE.

BY PROF. XAV. LANDERER,

Athens, Greece.

THE quantity of the annual production of olive-oil in Turkey and Greece cannot be exactly stated, as no statistics are available, and no sort of care, either by manuring or by irrigation, is bestowed upon this valuable tree; besides, for many centuries there has existed a popular notion that the olive-tree, like some other wild fruit-trees (as, for instance, *Quercus Aegilops*, Willd., which furnishes the so-called balanidia or valonias), produces abundant crops only in every alternate year, and does not require special cultivation. In prosperous seasons, Greece, together with the Ionian Islands, especially Corfu, can produce from 12 to 15 millions of okes* of olive-oil, of which about 10 millions are exported. Turkey in Europe and Asia Minor, with the rich islands Mitylene, Chios, and Crete, produce annually about 50 mill. okes, of which some 30 mill. are exported.† Regarding the quality of this oil, as produced in Greece or Turkey (where it is called Zaitoun Yāghi, vulg. Zaitoun-yāgh), it must be acknowledged that it cannot replace the best French or Italian olive-oil for table use, but, nevertheless, millions of people use this oil for culinary purposes, chiefly as a substitute for butter, which is very dear, costing 4 to 5 drachmas per pound, while the oil can be purchased for 1 dr. and 20 leptas.‡ If the Greek oil were prepared by cold expression and filtered, it would be not only quite equal to Provence or Lucca oil, but would probably be preferred to the latter as being purer and a more natural product. Therefore, I desire to appeal to all those who are specially interested in the production or sale of olive-oil, to cause factories to be established in Greece or Turkey for the manufacture and export of pure olive-oil, which could not fail to yield handsome profits.

Millions of pounds of inferior oil are used in the manufacture of soap and for other industrial purposes. Such soaps are generally marked with a Turkish monogram, as, for instance, the Cretan soap, *Kreticon Sapouni* §, which has an excellent reputation in all parts of the Levant, as well as in Europe. Large quantities of so-called "Pyrinclaron," an oil, which is obtained by exhausting the olive-kernels with carbon disulphide, have also been made use of, of late years, in the manufacture of soap. Formerly, these kernels and other residues, which yet contained from 3 to 5 per cent. of oil, were thrown away as useless, or used as fuel for heating the water in the oil-mills. The recovery from this waste product of the residuary oil has been of great importance for Greek industry.

* 1 oke = 2¾ lbs. avoird.

† We find the following note on olive-oil production in the *Pharmac. Geschäftsbl.*: While France produces annually only 250,000 hektolitres of olive-oil (and together with Algiers 400,000 hektolitres), Austria produces 264,000 h. l. annually, that is about one-third of the yield of Portugal. Spain produces 1,135,000 h. l. yearly, Greece to the value of about 5,000,000 francs, and Turkey about as much more. But all these countries are surpassed by Italy, which is the richest olive-territory in Europe. According to Prof. Landerer, the Levant appears to produce a good deal more of olive-oil than has been supposed.—ED. N. R.

‡ 1 drachma = 100 lepta = 0.18 3-5 cents gold.

§ Κρητικὸν Σαπούνι.

NOTE ON THE DATE AND ITS USE IN THE ORIENT.

BY PROF. XAV. LANDERER, ATHENS, GREECE.

DURING the months of November and December the markets of the Orient are supplied with dates from Alexandria, Cairo, and other parts of Africa. These are mostly purchased by well-to-do families only, as they are dear in proportion to other fruits, the oke of fine-flavored and perfect dates—which are called churmades*—costing as much as four drachms.† The kernels of the fruit may be found lying about on the streets of Egyptian cities in astonishing quantities; these, as well as apricot-kernels, are generally collected by poor people, who roast and grind them and prepare from them a sort of "coffee" of quite pleasant taste, which is very commonly drank in the small coffee-houses by the poorer classes. In Mekka and Medina, during the height of the annual pilgrimage, when as many as 100,000 pilgrims are sometimes present, this kind of coffee is sold to them in immense quantities by the Kaffetzy's, at the rate of two tanady's per cup. A good housewife is said to be able to prepare thirty different kinds of dishes from dates. Egypt exports also, as delicacies, date-bread, date-confection, and date-sherbet. The latter is mostly sent as a present to absent friends. The confection is prepared from dates which are mixed with nuts pounded in the saccharine juice of the date, or with pounded mann-fruit, that is, the root of Cyperus esculentus. The latter are likewise brought from the Orient during the winter months, under the name of mana-mana, and are sold at three leptas per oke. They have a very agreeable taste, resembling chestnuts or almonds, and are used for baking a special kind of bread, or for preparing a delicious sort of almond-milk, or else are expressed to procure the fixed oil which they contain. The word Manah‡ in Hebrew denotes "a gift, a donation." It is not unlikely that these roots, as well as Manna Sinaitica§ from Tamarix mannifera (produced by the puncture of an insect, Cynips manniparus, or Coccus manniparus), and Persian manna (from *Hedysarum Alhagi* L., *Alhagi Maurorum*, Journ.),‖ may have formed the food of the Israelites in the desert, as the fruit of the carob-tree (St. John's bread), together with the edible locust, are mentioned as the nourishment of John the Baptist in the desert.

*Χουρμάδι or χουρμᾶς, in modern Greek, from the Persian *khurmā*. The English name *date* is derived from the root "*dakt*," by lengthening of the vowel and elision of a consonant. Thus the Greek δάκτυλος and Latin *dactylus* has branched off into two forms—one analogous to the English *dāte*, namely Swedish and Dutch *dadel*, and Spanish *datil* (and *datilero*); the other with short vowel and assimilation, as Italian *datolle* and *dattero*, French *datte* and *dattier*; Lith. *dattule*, Germ. *dattel*, Dan. *daddel*. In Arabic the date has a number of names, one of which is *tamr* ("slender," a generic name for "palm"), which is afterwards used only to denote the ripe, dry fruit: this form is the source of the Portug. *tamara* (date) and *tamarero* (date-tree), and of a number of variations in use in Northern Africa as well as of the Mediævo-Greek τομαρ-έντι. Another Greek appellation is φοῖνιξ (*phœnix*), which is said to have been applied to the fruit and tree, because introduced by the Phœnicians. From this is derived the Russ. *finik*, and probably the Goth. *faika* (in Ulfila's translation). The old Egyptian name for "palm" was *bet* (*bads* in the Saïtic dialect), in Copt. *bai* (properly a palm-branch), from which appear to be derived the dialectic and later Greek βαΐς, βάϊον, βαΐα (the date-tree is even yet called βαγιά in Crete), βαγία, etc.—CH. R.

† About 75 cents gold.

‡ The derivation of the Hebr. mān ("manna," that is, the miraculous food of the Israelites in the desert), from Hebr. mānah ("gift") or Arab. manna, is, however, very improbable. See Fürst's Concordance, s. v. —CH. R.

§ Or Tamarisk Manna. See *Pharmacographia*, p. 371.

‖ According the *Pharmacographia* l. l., Alhagi Manna is obtained from Alhagi Camelorum, Fisch.—Ed. N. R.

THE U. S. PHARMACOPŒIA.

DR. FREDERICK HOFFMANN, in a communication addressed to the editors, states that the remarks attributed to him by our reporter in the Proceedings of the Conversational Meeting of the College of Pharmacy of the City of New York (vol. v., p. 366, b., lines 2–8), are not exactly correct, and that the substance of his remarks was as follows:

"I regard it as important at first to decide whether the pharmacopœia should be made a book which should give precise and definite description of the official drugs and chemical and pharmaceutical preparations, sufficient to insure their identification and quality, so as to afford, even in legal cases, a standard of authority for reference. If the status of the average medical and pharmaceutical education in our country admits, our pharmacopœia should retain, as Dr. Squibb calls it, the "skeleton" form, and then be made to approach in scope, and equal in briefness and precision, the best pharmocopœias of the day, as, for instance, those of Germany, Switzerland, Austria, and Sweden. Or else, if we are not yet prepared for such a standard, and a compendium rather than a pharmacopœia proper is wanted, there seems a tendency to prevail to reach a compromise between the two, so as to make a code which combines at once the substance of a pharmacopœia, and, in a condensed form, the supplementary material hitherto offered for needed information and reference by the Dispensatory and other commentaries.

"This question in regard to the compass and diameter of our next pharmacopœia, therefore, appears to me to require due consideration prior to that, by whom and how the work shall be done."

COMMITTEE ON ADULTERATIONS AND SOPHISTICATIONS.

WE publish the following card from the Committee on Adulterations and Sophistications of the Am. Ph. Assoc., hoping that all of our readers who become cognizant of any item of interest relating to the subject will comply with the request of the Committee:

AMERICAN PHARMACEUTICAL ASSOCIATION,
Dec. 6, 1876.

DEAR SIR—The Committee on Adulterations and Sophistications invite your co-operation in furnishing material for the next annual report. Original investigations will be most thankfully received, and due credit given to the authors; but in the absence of these, any published articles bearing on the subject, which you may meet with in your reading of pharmacal or other journals, would be very acceptable.

E. H. SARGENT, Chicago.
Dr. W. H. PILE, Philadelphia.
EMLEN PAINTER, San Francisco.
Committee.

Please address communications at as early a date as convenient, to

E. PAINTER,
Corner Clay and Kearny Streets, San Francisco, Cal.,
Chairman of Committee.

Fraudulent Mineral Waters.—The Treasury Department has received information to the effect that a large portion of the mineral waters imported in bottles into the United States, and which are entered free as natural, consists, in fact, of artificial mineral waters which are dutiable under Schedule M. as follows: "Mineral or medicinal waters, artificial, for each bottle or jug containing not more than one quart, three cents, and, in addition thereto, twenty-five per centum ad valorem; containing more than one quart, three cents for each additional quart or fractional part thereof, and, in addition thereto, twenty-five per centum ad valorem." The customs officers have been instructed to make more careful examinations of all importations, and to notify importers that hereafter invoices of so-called natural mineral waters should be accompanied by certificates from the shippers abroad showing that they are, in fact, natural mineral waters, and specifying the spring or springs which produce the same.

BIBLIOGRAPHY.

THE POPULAR HEALTH ALMANAC FOR 1877. Edited by FREDERICK HOFFMAN. E. Steiger, New York, 1876.

THE second annual issue of this useful and valuable pamphlet, which was originally designed to supplant the nostrum-almanacs, contains a well selected series of articles on hygiene, first help in accidents and emergencies, tables of weights, measures, and moneys (the latter, however, only in the German edition), a list of nineteen nostrums, giving their constituents, and various other very interesting matters, all of which will make the little volume deservedly popular.

[Books and Pamphlets Received.

☞ **Carpenter** (William B.). Principles of Human Physiology. A new American from the eighth revised and enlarged English edition. Henry C. Lea. 8vo, pp. 1,083.

Transactions of the Illinois State Medical Society for 1875. 8vo, pp. 288.

Schweig (G. M.). The Electric Bath: Its Medical Uses, Effects, and Appliance. New York: G. P. Putnam's Sons. 12mo, pp. 134.

Duhring (Louis H.). A Practical Treatise on Diseases of the Skin. Philadelphia: Lippincott & Co. 8vo, pp. 618.

Ziemssen (Dr. H. von). Cyclopædia of the Practice of Medicine. Vol. VII.: Diseases of the Chylopoëtic System, Diseases of the Naso-Pharyngeal Cavity and Pharynx, and certain Affections of the Larynx. New York: Wm. Wood & Co. 8vo, pp. 1,046.

The Oregon Medical Journal, Salem, Oregon. Editors: C. H. Hall, M.D.; A. Sharpless, A.B., M.D. Associate editor: L. L. Rowland, A.M., M.D.—[all of whom are professors in the local medical school. The journal is published quarterly by the Marion County Medical Society, has 32 pages of matter, costs $2.10 per year, and is worth the money.]

Transactions of the Colorado State Medical Society, 1876.

Jacobi (A., M.D.). On Masturbation and Hysteria in Young Children. Wm. Wood & Co. 8vo, pp. 32.

Chadwick (James R., M.D.). The Medical Libraries of Boston. Privately published. pp. 11.

Catalogue of Some Store and Greenhouse Plants, including Orchids, Ferns, Palms, etc., for sale by George Such, South Amboy, N. J. 8vo. [This must be a very interesting collection of these beautiful plants, and will richly pay for the half day's time which it will take for a visit from those who live at no greater distance than New York.]

Vick's Illustrated Catalogue of Seeds, Bulbs, etc., for 1877. [The handsome catalogue of this well-known dealer is always interesting.]

Seiler (Carl, M.D.). Micro-Photographs in Histology. Vol. 1, No. 6.

NEW BOOKS.

Galippe (L. M. V.). Etude toxicologique sur l'empoisonnement par la Cantharidine et par les Préparations Cantharidiennes. 8vo, pp. 204. Paris. 1876.

Goullon (Dr. H.). Thuja occidentalis: Abenländischer Lebensbaum. Eine monographisch- therapeutische Abhandlung nebst kritischer Beleuchtung der sogenannten Lues gonorrhoica (blennorrhoischen Syphilis) oder Sykosis Hahnemann's. Vom homœopath. Centralverein Deutschlands gekrönte Preisschrift. 8vo. Leipzig.

Landolt (Prof. Dr. E.). Die Einführung des Metersystems in die Ophthalmologie. 8vo. Stuttgart.

Knop (Prof. A.). System der Anorganographie als Grundlage für Vorträge an Hochschulen. 8vo. Leipzig. Pp. 324.

Stein (Dr. S. Th.). Das Licht im Dienste wissenschaftlicher Forschung. Pp. 498. 8vo. Leipzig.

Frey (Prof. Dr. Heinr.). Handbuch der Histologie und Histochemie. 5th ed. 634 illust. 8vo. Leipzig.
(*New edition of this important work.*)

Parsons (C.). On Sea-Bathing and Sea Air. London.

Woodman (W. Bathurst) and **Tidy** (C. M.). A Handy-Book of Forensic Medicine and Toxicology. Illustrated. London.

Fothergill (J. M.). The Practitioner's Handbook of Treatment; or, the Principles of Rational Therapeutics. London.

Auerbach (G.) Anthracene: Its Constitution, Properties, Manufacture, and Derivatives, including Artificial Alizarin, Anthrapurpurin, etc., with their Applications to Dyeing and Printing. Translated and edited by William Crookes. London.

Calendaria Botanica Ridiculosa. 1877. Fcap. 8vo. London.

Cooke (M. C.). A Manual of Structural Botany. New edition. 18mo. London.

Wanklyn (J. A.) and **Chapman** (E. T.). Water Analysis: A Practical Treatise on the Examination of Potable Water. Post 8vo, pp. 192. London.

Jackson (L. D. A.). Simplified Weights and Measures. 8vo. London.

Allen (F. F.) and **Norton** (G. S.). Ophthalmic Therapeutics. 8vo, pp. 279. New York.

Sutton (Francis). A Systematic Handbook of Volumetric Analysis. 3d edit. 8vo, pp. 425.

Herring's Condensed Materia Medica.

Hart (C. P.). Repertory to Hale's New Remedies. 8vo, pp. 190.

Wythe (J. H.). A Compendium of Microscopic Science (including Micro-chemistry). 8vo.

Ireland (J.). The Oil-man's Calculator. Cr. 8vo, pp. 288.

Simmonds (P. L.). Hops: Their Cultivation, Commerce, and Uses in various Countries. Cr. 8vo, pp. 135.

Cooke (M. C.). A Plain and Easy Account of British Fungi. 3d ed. rev. 12mo, pp. 170.

Watson (H. A.). A Treatise on the Kinetic Theory of Gases. 8vo, pp. 58.

Andral. Recherches cliniques et expérimentales sur l'action des eaux sulfureuses d'Eaux-Bonnes. 8vo, pp. 51, 4 plates.

Dujardin-Beaumetz and Audigé. Sur les propriétés toniques de la glycérine. 8vo, pp. 15.

Dujardin-Beaumetz. Sur les propriétés physiologiques et thérapeutiques des sels de cicutine et en particulier du bromhydrate de cicutine. 8vo, pp. 15.

Pathault (L.). Des propriétés physiologiques du bromure de camphre et de ses usages thérapeutiques. 8vo, pp. 48.

Cooke (Dr. M. C.). Report on the Oil Seeds and Oils in the India Museum, as produced in India. 8vo. London.

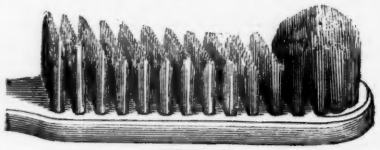
Mackenzie (Morell, M.D.). The Pharmacopœia of the Hospital for Diseases of the Throat. Based on the Brit. Pharm., 1867. 3d ed. London.

A Possible Sanitarium for Consumption.—Dr. Wight, in a little pamphlet of eight pages, gives an interesting account of the people—four thousand in number—who live on Walden's Ridge, in Tennessee. He has not been able to find that a well authenticated death from consumption ever occurred among the natives. The ridge is from two thousand to two thousand five hundred feet high. The mercury has never been known to be above 95° F. or below 10° F. The people live mostly in log-houses, which admit plenty of fresh air, burn wood, wear no flannels, and live on corn-bread, bacon, and coffee. They are mostly farmers, and very few appear to work hard. The Cumberland table-land, of which this ridge is a part, seems to offer an inviting field for those predisposed to pulmonary complaints. It comprises territory enough to make a good-sized State, and the city of Cincinnati has determined to build a railroad through that great table-land in the north part of the State, connecting with Chattanooga in the southern part.—*Boston Med. and Surg. Journ.*

PHARMACEUTICAL SUNDRIES AND NEW INSTRUMENTS.

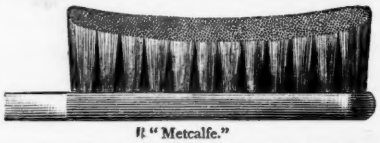
"Perfection" Tooth-Brush.

Mr. Theo. Ricksecker, 146 & 148 William street, New York, has shown us some novel patterns of the celebrated brand of "*Perfection*" Tooth-Brushes, illustrations of which are herewith appended. The "*Windsor*" Brush



"Windsor."

combines a palate or cavity brush, with a penetrating tooth-brush. The "*Metcalfe*" is also a handsome pattern.

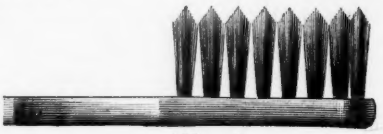


"Metcalfe."

The "*Philadelphia*" derives its name from its great popularity in that city, and is sometimes called the "Mintzer."

"Philadelphia."

The "*Murray*" finds special favor through a celebrated dentist of Murray Hill, in this city. All the above sell at $36.00 per gross.



"Murray."

The "Perfection Glycerine Jelly" from this house is worthy of note, being a fine article of solidified glycerine, nicely scented, in wide-mouth bottles. Retail price, 25 cents. At a season when chapped hands and lips are so common, this is a good article to have in stock.

Tin-Foil.

It may not be generally known that *tin-foil*, as now so widely used in the trade, is not a foil made of tin alone, but composed mainly of lead with but a slight alloy of tin. The manifold appliance of tin-foil to articles of consumption and medicine is not regulated with us by any laws such as exist in European countries, forbidding the use of lead or composition, or otherwise impure tin-foil in all cases where it may through oxidation or contact with the goods become poisonous and injurious to the health of the consumers—as was the case in an instance mentioned among the items in this number. Too little attention has been paid to this subject so far. It is to be hoped that ignorance, and not wilful oversight of the facts, has led many manufacturers and dealers to use an article accompanied with such risks,

for the sake of saving a trifle in the cost. Besides this saving is in most instances imaginary, as the German *pure tin-foil* combines such a fineness and *large yield*, with relatively great softness and strength, that it will practically answer most purposes, and not cost more than an equal surface of the lightest composition foil, while all heavier grades of the latter will be much more expensive to use. The yield of the regular German pure tin-foil is 72 square feet, or 10,368 square inches per pound; a heavier grade yields 66 square feet. The sheets are large-sized, and waste in cutting is consequently small. The manufacture of this superior article of pure tin-foil has flourished for over a century in and around Nuremberg (Bavaria), and its importation is made a specialty by Witteman Brothers, 164 William street, in this city; who also furnish gold-foil (gold-plated tin-foil), colored foil, tin-foil paper, and metallic caps in every variety.

NEW PATENTS AND LAWS.

[*We will furnish gratis, to subscribers, any information relating to new patents which can be obtained from the Official Gazette of the Patent Office; and for 50c. will give copies of the drawings of such as are illustrated. Electrotypes of the illustrations contained in* NEW REMEDIES *will be furnished for 50c. per square inch.*]

TRADE-MARKS REGISTERED IN U. S. PATENT OFFICE.

Certificates dated Oct. 10, 1876.

4,037. **Cordial or Liqueur.**—Alexandre Legrand, Ainé, Féchamp, France. "A lead band applied around the neck of the bottle containing my cordial and having a thin strip of lead soldered thereto, which strip is extended over the cork of the bottle to the opposite side of the neck-band to which it is also soldered, and is then run downward along the neck of the bottle to a front seal, to be retained by the same, and a seal on the cork of the bottle."

4,041. **Medicines.**—Goldenberg & Co., Philadelphia, Pa. "The letter 'G.'"

4,042. **Preparation for the Hair.**—R. P. Hall & Co., Nashua, N. H. "The fanciful title 'HALL'S VEGETABLE SICILIAN.'"

4,043. **Preparation for Lung and Throat Diseases.**—William N. Hedges, Springfield, Ohio. "The word 'Life' and the portrait of the proprietor."

4,048. **Medicinal Oil.**—Joseph B. Sabine, London, Ontario, Canada. "The figure of a flower represented in the accompanying fac-simile; also the name 'Curatine,' and the legend 'For the healing of the nation.'"

Certificates dated Oct. 17, 1876.

4,053. **Natural Mineral Waters.**—Richard Dunbar, Waukesha, Wis. "The words 'Dunbar's Wonderful Discovery; Bethesda.'"

4,057. **Flea-Destroying Powder.**—Lazell, Marsh & Gardiner, New York, N. Y. "The compound word-symbol 'Flea-Killer.'"

4,060. **Fever Medicine.**—Frank H. Shelhorst, Belleville, Ill. "A heavy stone arch, bearing three heavy stone pillars, placed in a line over the centre of the arch from right to left, the heaviest in the centre, and each of these pillars has a cap on the top, tapering to a point; second, a pair of scales, suspended over the arch and pillars from right to left, embracing the pillars."

4,061. **Medical Preparation.**—John N. Solomons, Bayonne, N. J. "The word-symbol 'Digestine.'"

4,062. **Medicated Plasters.**—Seabury & Johnson, New York, N. Y. "Word 'Capcine.'"

Certificates dated Oct. 24, 1876.

4,065. **Tooth and Mouth Wash.**—E. Fougera & Co., New York, N. Y. "Words 'Bernard's Golden Dentilave.'"

4,067. **Tincture for Destroying Bed-Bugs.**—Charles Heinrich, Plainfield, N. J. "The fanciful words 'THE WONDERFUL KILLER.'"

4,070. **Acid Phosphates.**—John E. Lauer, Edgewater, N. Y. "The word 'Wheat,' and the representation of the fox, stork, and jar."

Certificates dated Oct. 31, 1876.

4,078. **Cordial.**—Alexandre Legrand, Ainé, Féchamp, France. "The fac-simile of my signature."

4,080. **Medical Preparation.**—Thomas C. Clarke, Chicago, Ill. "The word-symbol 'PAPILLON.'"

4,085. **Insect Exterminator.**—Guardias & Rovira, New York, N. Y. "The word-symbol 'Eutomaponos."

4,086. **Medicine.**—Thomas E. Jenkins, Louisville, Ky. (Reregistration). "A picture or pictorial representation of the flowering stem of the plant *Cinchona calisaya*, printed upon, over, or by the side or end of the labels."

4,091. **Liniments.**—Francis Register, Philadelphia, Pa. "The figure of a woman represented as holding a vessel from which a snake is drinking or about to drink."

Certificates dated Nov. 14, 1876.

4,129. **Medical Compound.**—Eugene L. Robertson, North Lansing, Mich. "The fanciful words 'THE GREAT AMERICAN.'"

4,132. **Medicine.**—C. Wakefield & Co., Bloomington, Ill. "The word 'Wakefield,' and a portrait of Doctor C. Wakefield."

Certificates dated Nov. 21, 1876.

4,142. **Lotion.**—Manchester & Co., New York, N. Y. "The arbitrarily-selected words 'BALM OF GILEAD,' and the figure of a horse represented as trotting.

4,143. **Cough Medicine.**—E. R. Post & Co., Newburg, N. Y. "The fanciful words 'KNOTT'S KOFF KNOT.'"

Certificates dated Dec. 5, 1876.

4,173. **Medical Preparation.**—John Fareira, Philadelphia, Pa. "The word-symbol 'CONTINENTAL.'"

4,176. **Volta or Electro-Galvanic Goods for Medical Purposes.**—John E. Hetherington, Cincinnati, Ohio, "a symbol or device, consisting of the representation of a group of elements arranged to form a volta-galvanic or electric chain or battery, or a part of a chain or battery, from which lightning-flashes proceed. Across the face of the above-described symbol are arranged the words 'Pulvermacher Galvanic Co.,' and below it a correct fac-simile of the autograph signature of J. L. Pulvermacher.

Certificate dated Oct. 10, 1876.

836. "**Dickenshield's Asthma Remedy.**"—Charles Dickenshield, Philadelphia, Pa.

Certificates dated Oct. 17, 1876.

839. "**Antiseptic Wadding.**"—Charles G. Amende, Hoboken, N. J.

840. "**Antiseptic Cotton.**"—*Ibid.*

841. "**Borated Cotton.**"—*Ibid.*

842. "**Borated Wadding.**"—*Ibid.*

Certificates dated Oct. 24, 1876.

843. "**Sulphuret Oil of Roses.**"—N. W. & F. S. Button, New York, N. Y.

845. "**An Unfailing Remedy.**"—Archibald M. De Witt, West Pittston, Pa.

854. "**Infallible Rheumatic Liniment.**"—Clinton Shane and James Kearney, San Francisco, Cal.

856. "**Dr. Wood's Fever Pills.**"—William Wood, Cairo, Ill.

Certificates dated Oct. 31, 1876.

861. "**The Great Horse Ointment.**"—Richard Hopps, Erie, Pa.

862. "**Old's Medicated Ozone.**"—E. F. Olds, Philadelphia, Pa.

863. "**Wakefield's Eye Salve.**"—C. Wakefield & Co., Bloomington, Ill.

864. "**Wakefield's Vegetable Liver Pills.**"—*Ibid.*

865. "**Browen's Rat, Ant, Roach, &c., Killer.**"—*Ibid.*

866. "**Wakefield's Tasteless Worm Destroyer.**"—*Ibid.*

Certificates dated Nov. 7, 1876.

872.—"**Pond Lily Wash.**"—George Gross, Washington, D. C.

874. "**The Great American Panacea, Dr. Robertson's Celebrated All-healing Balsam.**"—Eugene L. Robertson, North Lansing, Mich.

875. "**The Great American Wonder, Dr. Robertson's Celebrated Pain Exterminator.**"—*Ibid.*

Certificates dated Nov. 21, 1876.

878. "**Siever's Fieber Dropfen.**"—Otto D'Amour, St. Louis, Mo.

879. "**Siever's Fever Drops.**"—*Ibid.*

900. "**Liebig's Pectoral Troches.**"—New York Chemical Manufacturing Company, N. Y.

NEW PATENTS.

Patents granted Oct. 10, 1876.

183,097. **Treating Substances with Hydrocarbon Vapor.**—William Adamson, Philadelphia, Pa.

183,098. **Treating Substances with Liquid Hydrocarbon.**—The same.

183,110. **Apparatus and Methods for the Delivery, Separately, and Simultaneously, upon the same Point, of two or more Liquids Chemically Incompatible.**—Henry C. Berry, Chicago, Ills.

183,117. **Poison Bottles.**—J. W. Bowles, Louisville, Ky.

183,158. **Digesting Apparatus for Making Extracts.**—Thomas K Hardman, Lafayette, Ind., assignor of one-half his right to Samuel Bancroft, same place.

183,167. **Devices for Extracting Juices.**—G. Hinaman, Long Eddy, N. Y.

183,185. **Apparatus for the Generation and Hydration of Sulphurous Acid Gas.**—William Maynard, New York, N. Y.

183,193. **Machine for placing Capsules in Bottles.**—Wm. T. Moffatt, New York, N. Y., assignor to Charles T. Barnett, same place.

183,201. **Gravity Batteries.**—Myron W. Parrish, Jackson, Mich.

183,205. **Sphygmographs.**—E. A. Pond, Rutland, Vt.

Patents dated Oct. 17, 1876.

183,269. **Health-Lifts.**—James P. Marsh, Chicago, Ills.

183,296. **Exercising-Machines.**—Frederick Hainsworth and Jonathan Hainsworth, Chicago, Ills.

183,306. **Liquid-Measures.**—John F. Judy, Ferdinand, Ind.

183,322. **Bottle and Cup Stoppers.**—Carlton Newman, San Francisco, Cal.

183,376. **Apparatus for Contracted Joints.**—Samuel A. Darrach, Orange, N. J.

183,388. **Bougies.**—Joseph Fowler, Robert K. Smither, and John C. Allan, Buffalo, N. Y.

183,401. **Process for Refining Petroleum and other Oils.**—Daniel M. Lamb, London, Ontario, Canada.

183,443. **Optical Lenses.**—Charles Alt, New York, N. Y.

183,445. **Bottle-Faucets.**—Wm. Bentley and Richard Bentley, New York, N. Y.

183,454. **Apparatus for the Manufacture of Soda-Water.**—Wm. Gee, New York, N. Y.

183,455. **Connections for Soda-Water Apparatus.**—The same.

Patents granted Oct. 24, 1876.

133,512. **Bottle-Stopples.**—Augustus E. Rich, Fall River, Mass., assignor of one-third his right to Jas. H. Crittenden, same place.

183,597. **Manufacture of Cream of Tartar.**—Guido Schnitzer, Schwäbisch Hall, Germany, assignor to Julius W. Hass, Dubuque, Iowa.

183,599. **Liquid-Filtering Apparatus.**—T. R. Sinclaire, New York, N. Y., assignor to Sinclaire Rectifying Machine Company. Same place.

183,602. **Surgical Clamps.**—A. G. Strubell, Dresden, Saxony.

183,604. **Carbonic-Acid-Gas Generators.**—Charles N. Thompson, Waterbury, Conn.

183,661. **Apparatus for Treating and Aging Spirituous Liquors.**—George Gorwey, Philadelphia, Pa., assignor of one-half his right to John Yearsly, same place.

183,666. **Lozenge-Machine.**—Charles H. Hall, Brooklyn, N. Y., assignor to himself and F. P. Tarbell, New York city.

183,680. **Bottle-Stoppers.**—Gustaf Johnson, Cambridgeport, assignor to Charles Mingay and Halsey J. Boardman, Boston, Mass.

183,687. **Shades for the Eyes.**—Harry C. Kromer, Philadelphia, Pa.

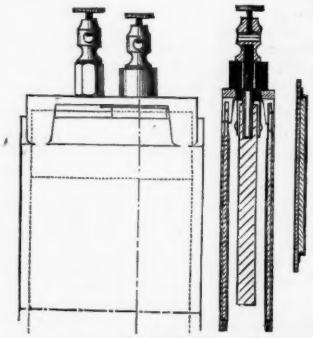
183,694. **Inhalers.**—George I. McKelway, Philadelphia, Pa.

183,709. **Cork-Extractors.**—John S. Saunders, Princeton, Cal.

Patents granted Oct. 31.

183,748. **Galvanic Battery Plates.**—Jno. Byrne, Brooklyn, N. Y.

1. The negative element of a galvanic battery composed of a central core of copper, covered on one face with lead, and on the other with compact adherent coating of platinum.



No. 183,748.

2. A galvanic battery cell, composed of two negative plates, each formed of copper, backed with lead and faced by platinum, with a zinc plate placed between the opposite platinum faces, as and for the purpose described.

183,763. **Health-Lifts.**—F. G. Johnson, New York, N. Y.

183,808. **Nursing-Bottle.**—William Kennish, New Brunswick, N. J.

A thin flexible diaphragm at bottom of stopper sup-

ports and gives free motion to a tube extending into the contents of the bottle.

No. 183,808.

No. 183,832.

183,832. **Pessaries.**—Jonathan P. Barnett, Navasota, Texas. The stem is slotted so that the sustaining-braces can drop and allow the wings to fold underneath the cup of the pessary.

183,840. **Processes of Making Birch Beer.**—Harvey Decker, Jersey City, N. J.

183,890. **Combined Bottle and Cup.**—Marx Block, Chattanooga, Tenn.

183,923. **Abdominal Supporters.**—Nancy J. Hanchette, Chicago, Ill.

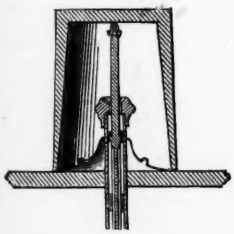
183,973. **Invalid-Bed Bottoms.**—Isaac M. Rhodes, Hancock, Mich.

Reissued.

7,376. **Filters.**—B. Schieffelin, Atlanticville, N. J. Patent 175,508, dated March 28, 1876.

Patents dated Nov. 7, 1876.

184,005. **Galvanic Batteries.**—Howard P. Dechert, New York, N. Y.



184,131. **Water-Filters.**—Roscoe A. Bean, Hudson, Mich.

184,142. **Process of Manufacturing Anthracene.**— Samuel Cabot, Jr., Boston, Mass.

184,153. **Abdominal Supporters.**—Ella M. Holton, Jackson, Mich.

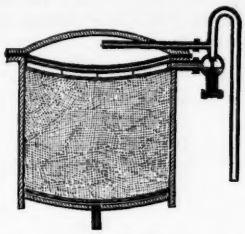
Reissued.

No. 7,380.

7,380. **Tumbler-Washers.** — E. W. Russell, Baltimore, Md. Patent No. 72,911, dated Dec. 31, 1867. The combination with a water-supply pipe having openings for the emission of water, of a valve adapted to be opened by the weight of the tumbler, and to be closed by the current of water in the pipe.

184,093. **Liquid-Filters.**—Wm. Maynard, New York, N. Y., assignor to L. R. Goodwin, same place.

184,024. **Apparatus for Filtering Liquids under Pressure.** — Robert Stewart, Brooklyn, N. Y. An air-tight vessel contains the filtering material and has a fixed impermeable flexible diaphragm dividing the vessel into two chambers. It also has an adjustable diaphragm. The induction-pipe has an automatic pressure-

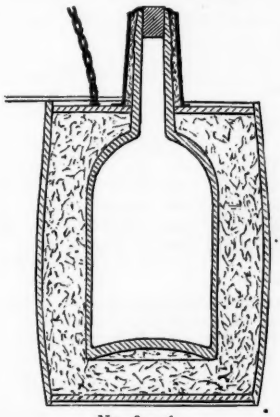


No. 184,024.

valve and branch pipe leading into the chamber above the flexible diaphragm.

Patents dated Nov. 14, 1876.

184,256. **Demijohns.**—James C. Moore, Philadelphia, Pa. Consists of an outer protecting case, an inner

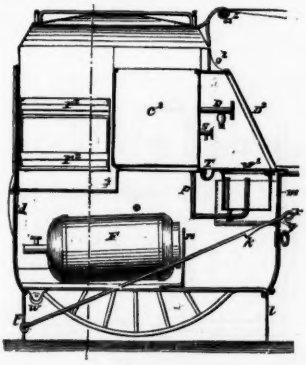


No. 184,256.

contained bottle, the neck of which projects through the head of the case and is surrounded and protected by a supplemental collar or sleeve attached to the head of the main casing.

184,292. **Portable Soda-Water Apparatus.**—J. Mathews, New York, N. Y.

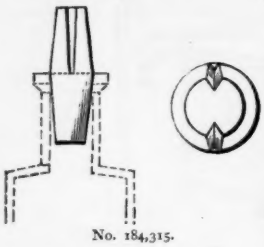
A soda-water coupé, or wagon, so arranged as to render



No. 184,292.

it convenient to dispense the beverage. It is supplied with a fountain, ice-chamber, draft-arm and syrup-faucets, tumbler-

washer, awning, cooling rack for glasses, adjustable legs, etc., as indicated in the cut.



No. 184,315.

184,315. **Stopper and Dropper Combined.**—J. A. Armstrong.

The stopper is so made that when one of its ends is inserted in the neck of the bottle two longitudinal grooves in its surface allow the simultaneous entrance of air and escape of fluid.

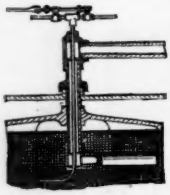
184,341. **Treatment of Linseed-Oil.**—H. A. Clark, Boston, Mass.

184,341. **Zinc-Oxide Furnaces.**—Samuel T. Hughes, Newbury, Ohio.

184,343. **Remedies for Dropsy.**—David W. Lawhon, Elgin, Texas, assignor of one-half his right to Wm. C. Lawhon. Consists of extract of grape-vine, spirits of nitre, oil of grape-vine, extract of Spanish apple-root, and common salt.

184,399. **Cases for Transporting Bottles.**—Lewis Mann, Detroit, Mich.

184,427. **Filters.**—Daniel W. Riddle, Waterloo, N. Y.



No. 184,427.

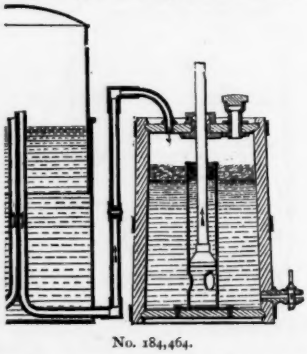
A revolving filter is connected with an exhaust-pipe, which carries off the filtered liquid and maintains a lower pressure on the inside than exists on the outside of the filter. Also the process for cleaning a filter, by means of showering or pouring on its exposed surface the filtering liquid and steam, air, gas, or vapor introduced intermittingly.

184,444. **Furnaces for Evaporators.**—Wm. M. Towers and John M. Bowie, Rome, Ga.

184,454. **Druggists' Shelf-Bottles.**—E. L. Witte, White Mills, Pa.

Patents granted Nov. 21, 1876.

184,464. **Apparatus for Aging Liquors.**—H. G. Dayton. A receptacle for the whiskey is provided with a pipe rising from the centre of the bottom to a point near the top. This pipe has openings near its bottom and perforations at the top, with a larger opening in the cap, through which passes a rod having a plunger at its bottom. As the rod and plunger rise, the liquor above is forced out through the perforations, and comes in contact with the oxygen, which is supplied by means of a pipe and stop-cock from a gasometer.



No. 184,464.

184,487. **Air and Water Beds.**—George M. White, New Haven, Conn.

184,528. **Electro-Vapor Baths.**—Thomas W. Johnson and J. N. Cherry, Keokuk.

184,593. **Manufacture of Bottles.**—Edgar N. Curtice, Rochester, N. Y., assignor to himself, Simeon G. Curtice, and Frank M. Mack, same place. A bottle having ribs or corrugations extending from its bottom edge to its shoulder, said ribs or corrugations being intercepted at about the centre of the bottle by an annular recess encircling the bottle, intercepted by one or more circular recesses, forming seats for a label.

No. 184,593.

184,608. **Bottle-Filling Apparatus.** W. Gee, New York, N. Y.

184,621. **Frictional Electric Machines.** Charles H. Hinds, New York, N. Y.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, providing they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

Detection of Tartaric in Citric Acid. (T. L., N. Y.)—The following method has been proposed by Allen, and gives very good results. Two gm. of the suspected acid are dissolved in 45 cub. centim. of alcohol, the solution is filtered if necessary, and the filter washed with alcohol. To the filtrate are added 5 c.c. of a cold saturated solution of potassium acetate in alcohol, and after thorough shaking or stirring, the mixture is allowed to stand for twelve hours. The precipitate is collected on a filter, washed with alcohol, and washed off the filter with a saturated solution of acid potassium tartrate (cream of tartar) in cold water. Having allowed the solution and the precipitate to remain in contact, under occasional stirring for a few hours, the mixture is again filtered, the precipitate washed once with alcohol, and then transferred by means of boiling water into a capsule, where it is evaporated to dryness and weighed. The weight of the residual cream of tartar multiplied by 0.798, or short, by 0.8, gives the amount of tartaric acid in 2 gm. of the examined acid.

Potassium Iodide and Chlorate (J. O. H., Gibson City, Ill.)—The statement that the simultaneous administration of these two substances is apt to produce symptoms of poisoning is ascribed to M. S. Bidwell, and has been mentioned in our last volume, on page 214. We have had no confirmation so far of the correctness of this statement, and therefore cannot give any other than a hypothetical explanation, which is this, that possibly the oxygen, which chlorate of potassium *may* give off, combines with the iodide of potassium to convert it into iodate. But, theoretically at least, this is doubtful, as but little, if any, chlorate of potassium is decomposed in the stomach, and the conversion of an iodide into an iodate by the agency of a chlorate, in absence of a tolerably strong acid, is highly improbable. We expect, however, to be able to give more precise information shortly, as we have been promised to be furnished with the results of some experiments which are being conducted at present to settle this point.

Churchill's Iodine Preparations (A. N. B. and others).—There are two of these preparations, viz.: the compound tincture and the iodine caustic. Formulas for their preparation may be found on the next page of this number.

Tasteless Tincture of Iron (T. & S.).—The tasteless iron-preparations were introduced several years ago by Mr. J. L. A. Creuse, and have become a favorite and staple rem-

edy. The tastelessness is owing to an addition of an alkaline citrate, which not only masks the taste of iron, but the usual tests as well. The tincture may be made by adding an alkaline citrate (say citrate of soda or ammonia) to an aqueous solution of sesquichloride of iron, in the proportion of two equivalents of the former to every three equivalents of chlorine in the latter, whereby a green salt is produced, which is dissolved in diluted alcohol. Two fluid-drachms of the officinal liquor ferri chloridi require about 120 to 140 grains of citric acid, saturated with either ammonia or soda—the quantity depending upon the real iron-percentage of the liquor—to be added before the alcohol; and the alcoholic strength of the tincture, when finished, must not be more than 30 or 40 per cent., instead of 70 per cent. as usual.

Etymology of "Elixir" (J. W. K., M.D.).—Prof. Hermann Kopp, in his *Beiträge zur Geschichte der Chemie*, 1869, p. 450, has communicated all information which was accessible up to that time regarding the etymology and original meaning of the word "*elixir*." Regarding the meaning of the word, it was used by the alchemists of the middle age to denote the means of converting the baser metals into silver and gold; in fact, it was almost synonymous with *λίθος τῶν φιλοσόφων*, *lapis philosophorum*. Prof. Kopp states that the word had been said to be of Greek origin; others had referred it to an Arabic and some to a Latin (*elixare*, 'to extract by boiling') source. Kopp also mentions (l. l., p. 209) that the Greek *ξήριον* ("a desiccative powder") occurs in Greek alchemistic writers, to denote "a powder or a liquid used to convert base metals into gold and silver," that is, the philosopher's stone. But it escaped him that this is the real origin of "*elixir*." *El* or *al* is the Arabic article, and the identity of *iksîr* with *ξήριον* has been pointed out already by Fleischer (*De glossis Habichtianis*, 1839, p. 70).

In this connection we may add that some late investigations of Prof. J. Gildemeister appear to have settled the doubts as to the derivation of "*chemia*, *chemistry*, etc." The Arabic equivalent *kîmiyâ*, namely, is frequently found to denote not only *the art*, but also the *means* of accomplishing the purpose of the alchemists, being therefore identical, in the latter sense, with iksîr. Now, as the only possible derivation, which permits the interpretation of the word in the sense of *ξήριον* above given, is *χυμός: juice, liquid*, there can be no doubt that this is the true source of the word.

Catha Edulis (A. S. W., A.B., Cambridge).—This plant, which is a native of Arabia and Abyssinia, belongs to the nat. fam. of Celastraceæ, and its leaves are used in Arabia for the same purposes as tea or coca. Flückiger found it flowering lately in Liguria (*Buchner's Rep. f. Phar.*, 1876, 504). It contains neither thein nor caffein. The Arabs are very fond of chewing the young twigs and leaves, which produces a gentle excitement and dispels sleep. Niebuhr already mentions this use of the plant, which in Arabic is termed Chaat or Khat. See also *Seetzen, Monatliche Correspondenz*, 27, 176; *Lord Valentine's Travels*, ii., 411; *P. E. Botta, Relation d'un Voyage dans l' Yemen*, Paris, 1841. According to Sylvestre de Sacy (Chrestom. Arabe, i., 419), khat-chewing has been customary in Arabia long before the introduction of coffee. La Roque (*Traité historique de l' Origine du Café*, Paris, 1716, p. 320) asserts that the use of a decoction of the leaves, as a sort of tea, has been entirely replaced by coffee. The plant is described by Forskal in *Flora Aegypto-Arabica*, cent. 3, no. 4, p. 64.

Lafayette Mixture (D. T., N. Y.).—You are quite correct in stating that there are various formulæ of this mixture in vogue, that recommended by Prof. Bumstead differing by the addition of liquorice. (For the benefit of our readers we print this formula elsewhere in this number.) When "Lafayette Mixture" is ordered, without special directions, you are justified in adopting any of the usually known and printed formulæ, which contain about fl. ℥ i. of balsam copaiva in half a pint of mixture.

Syrup of Manganese Iodide (B. W., Vicksburg.)—Hager gives the following formula for preparing this syrup: Three parts of manganese carbonate are introduced into a flask, and 60 parts, or a sufficient quantity of hydriodic acid are poured upon it. When solution has been effected, it is filtered, and the filter washed with a little distilled water. The clear filtrate is placed into a porcelain capsule, and after the addition of 100 parts of white sugar, rapidly heated to boiling, which is to be continued until the contents of the capsule weigh 160 parts, when the syrup is at once to be transferred to small vials, which must be well closed and completely filled, and kept in the dark. 100 parts (by weight) contain 5 parts of manganese iodide.

Protagon (G. M. G., Cuba, N. Y.).—A paper on this subject, by Dr. Chas. G. Polk, published in our November number, pp. 344, will give you the desired information as to its sensible qualities. We are not yet familiar enough with it to make any statement about it. It may be obtained from H. E. Ashmead, 2415 Madison avenue, Philadelphia, at $4.00 per pound or pint for the natural, extracted from the brain of the cow; and at $3.00 for the artificial.

PRESCRIPTIONS AND FORMULÆ.

Tinct. Iodinii Co. (Churchill's).—

℞ Iodine ..... ijss.
Potassium iodide ..... ss.
Alcohol (91%) ..... iv.
Alcohol (69%) ..... xij. Dissolve.

Churchill's Iodine Caustic.—

℞ Iodine ..... ℥ i.
Potassium iodide ..... ij.
Water ..... ss. Dissolve.

Mistura Copaivæ. (Bumstead).—"LAFAYETTE MIXTURE."

℞ Copaibæ ..... fl. ℥ i.
Liquor. potass ..... fl. ℥ ij.
Extr. glycyrrh ..... ss.
Spts. æther. nitr ..... fl. ℥ i.
Syrup. acaciæ ..... fl. ℥ vi.
Ol. gaulther ..... gtt. xvi.

Mix the copaiva and the liquor potassæ and the extract of liquorice and spirits of nitre first separately, and then add the other ingredients. [Fluid extract of liquorice fl. ℥ ss. instead of the powdered solid extract, makes a nicer preparation.—Ed. N. R.] Dose: A tablespoonful after each meal.

Mistura Resinæ Copaivæ.

℞. Resinæ copaivæ ..... ℥ iss.
Ol. amygdal. dulc ..... fl. ℥ iv.
Mucil. acaciæ ..... fl. ℥ iss.
Liq. potassæ ..... fl. ℥ ss.
Ol. cinnamom ..... gtt. vi.
Aquæ ..... q. s. ad. fl. ℥ vi.
M.

Dissolve the resin in the almond-oil with gentle heat, then add the liq. potassæ and form an emulsion. (A. Balkwill in *Ph. J. & Tr.*)

Pomata Ararobæ. (Da Silva Lima).

℞. Araroba, or goa powder ..... 2 to 4 gms.
Acetic acid ..... 1 to 2 gms.
Lard, benzoated ..... 30 gms.
M. Apply with a fine camel's hair brush.

Acetum Ararobæ. (Da Silva Lima).

℞. Araroba, or goa powder ..... 25 gms.
Acetic acid, diluted ..... 100 gms.

Digest the goa powder in the acid for 8 hours and filter. To be applied pure, or mixed with glycerine.

Syrup of Liquorice Root.—(A. P. Brown, *Am. J. Phar.*)

Liquorice root	4 troy ounces.
Cold water	q. s.
Water of ammonia	1 fluid ounce.
Granulated sugar	13 troy ounces.

Grind the root in a mill and place it into a wide-mouth bottle with tightly fitting stopper, pour upon it one pint of water, mixed with the water of ammonia, macerate for 48 hours, then transfer it to a funnel, allow the liquid to drain from it, and add sufficient water until 2 pints of liquid have passed; allow it to stand until the particles have subsided, then decant and evaporate to 8 fl. oz., filter, and having added the sugar, dissolve it with the aid of heat.

Cream of Camphor.—(Ch. Griffith, *Am. J. Phar.*)

Castile soap	℥ iss.
Water of ammonia	fl. ℥ iss.
Camphor	℥ vi.
Oil of turpentine	fl. ℥ vi.
Chloride of ammonium	℥ iss.
Water	fl. ℥ xij.

Dissolve the soap-shavings in one-half of the water previously mixed with the ammonia, and the ammonium chloride in the other half; mix the solutions well and add the camphor dissolved in the turpentine; then agitate briskly until the liquids are united and form a perfect emulsion. Other active medicines may be added when indicated.

Hydrobromic Acid Cough Mixture.—Dr. J. Milner Fothergill says the following is a really charming cough mixture, efficient as well as palatable:

℞	Sp. chloroformi	♏ xx.
	Acid. hydrobromic	fl. ʒ ss
	Syr. scillæ	fl. ʒ i.
	Aquæ	ad. fl ℥ i.

Ter in die. Any other acid is, he says, very agreeable; but the hydrobromic acid, from the effect of bromine upon reflex mechanism, allays the cough, often so troublesome. It possesses much the same action as opium, without the ill effects upon the digestive organs or the bronchial secretion. —*Medical Times.*

Formulæ for Treatment of Acne.—M. Rodet, of Lyons, prescribes the following treatment in acne. Friction is to be made every evening over the acne papules with the following:

℞	Adipis,	ʒ v.
	Sulphuris,	
	Acid. Tannici	ää gr. viij. ad xv.

M.

In the morning the face is to be bathed with warm water, to which a little bay rum has been added, the proportion being increased from day to day until it amounts to one-third. M. Doyen, of Lyons, recommends bathing with the following:

℞	Hydrarg. bichloridi	gr. xxx.
	Tinct. lavandulæ	f. ʒ ijss.
	Aquæ distillatæ	f. ℥ x.

M.

M. Hardy uses this formula:

℞	Potassii sulphureti,	
	Tinct. benzoini	ää ʒ ijss.
	Aquæ	f ʒ x.

M.

Two teaspoonfuls in a glass of warm water to be used externally.—*Med. Times, from La France Méd.*

Dr. Ferrier's Remedy for Cold in the Head.—We have so few things that can be of much service in arresting or relieving this disagreeable and common complaint, that we print again Dr. Ferrier's formula for a snuff, which is reported to work very well:

℞.	Bismuthi trisnitratis	ʒ vi.
	Pulv acaciæ	ʒ ij.
	Morphiæ muriatis	gr. ij.

M. To be used occasionally as a snuff.

Hot-Water-Proof Cement.

Gelatin	5 parts.
Soluble acid chromate of lime	1 part.

M. Cover the broken edges with this, press lightly together, and expose to sunlight, the effect of the latter being to render the compound insoluble even in boiling water.

Cement to attach Tin to Metallic Substances.

℞.	Mucilage gum tragacanth	10 ozs.
	Honey of roses	10 ozs.
	Flour	1 oz.

Mix.

ITEMS.

College of Pharmacy of the City of New York.—The regular Quarterly Meeting of the members of the College will be held on Thursday, Jan. 18th, at 8 P.M. After the necessary routine business will have been transacted, it is proposed to discuss matters of general interest to the profession, particularly the *Metric System*, the introduction of which has been lately very much advocated.

Official Alcoholometry in France.—The French Government is about to adopt by law the centesimal alcoholometer of Gay-Lussac, properly verified and adjusted by official authority, as a standard instrument to ascertain the percentage of alcohol in the wines and liquors manufactured and sold in France. Heretofore no special instrument or method had been prescribed by law in making these determinations, and in consequence thereof the same invoice of spirits tested at different places would sometimes show a difference of 5 per cent. in alcoholic strength.

Cinchona Plantations.—The departmental reports made to the Government of India, show that in Sikkim 385,000 cinchona trees, chiefly the red bark variety, were planted out in the financial year 1874-1875, bringing up the total number in the permanent plantation to 2,765,000. The red bark trees were in good condition. Though this bark is not so rich in quinine as the yellow variety, it apparently yields a greater quantity of alkaloid, which is an equally efficacious febrifuge. The inquiries of the Government quinologist have resulted in a cheap and efficient method of extracting the febrifugal alkaloids from cinchona bark. The area of land under cinchona in the Nilgherry Hills is reported at about 3,000 acres, part government and part private plantations. The manufacture of amorphous quinine having ceased in August, 1875, all the bark is now dispatched for sale in the London market. During the year 28,659 lbs. of mossed bark were shipped to England, and the prices averaged about 4*s.* per lb., an advance of more than 1*s.* on the average of the preceding year. The cultivation of cinchona in the Sittaud division of British Burmah was carried on with success. There were, at the close of the year, 19,234 plants growing well, and the nurseries contained 46,823 plants. The Government of India have decided not to manufacture quinine in British Burmah, and also prefer that the extension of the cultivation should be carried out through the agency of the Karens, and they have accordingly suggested that four Karen youths should be sent to the Sikkim plantation to be trained in the work.

The Prosecution of Prescribing Druggists.—The Executive Committee of the Chemists and Druggists' Trade Association have passed the following resolution: "That in any case in which a chemist and druggist is threatened with legal proceedings for recommending simple remedies, when required to do so, in his own shop, if he be a member, and the case is such that the sub-committee (appointed for that purpose) approves, this Association undertakes to defend him, but at the same time disapproves of other indiscriminate prescribing."

A Method of Preventing Cloudiness on Exploring Mirrors.—According to *L'Union Médicale* of September 23d, this means consists of passing lightly over the laryngeal mirror a linen cloth steeped in glycerine. The watery vapor contained in the expired air is dissolved completely in the glycerine, and the cloud does not form. This method is really more practical than to immerse the mirror in warm water, or to warm it at the flame of a lamp. M. Tamindis, the medical student who communicates the new process of preventing the laryngeal mirror from being obscured, proposes its extension to astronomical observations, and recommends its use to the persons who wear spectacles, and are obliged to go out in foggy weather.

M. Charles St. Claire Déville, a distinguished French scientist, is recently deceased. He was distinguished as a chemist and mineralogist, and was noted as the discoverer of amorphous and insoluble sulphur, thus showing, for the first time, a simple body in two conditions, differing not only in physical characteristics, but in essential chemical properties.

Druggists in France.—There exist in France 6,210 druggists' shops, of which 2,121 are of the first, and 4,089 of the second class. In 1866 the total number was only 5,803. Calculating the proportion to the whole population, this gives one druggist to every 10,000 inhabitants.

Calvert Scholarship.—The Manchester papers announce that Mrs. Crace Calvert has presented to Owens College the sum of £700 for the foundation of a scholarship in chemistry, in memory of her late husband, Dr. Crace Calvert, F.R.S. The scholarship will be of the annual value of £25, and will be competed for by members of the evening classes.

Cinchona Cultivation in Burmah is said to have been enthusiastically undertaken by the natives.

A rich Gold Mine.—The American mine, owned by Hiram Hitchcock, and superintended by Professor J. Alden Smith, is the most extensively worked in Sunshine district, Col. and for quantity and richness of ore, one of the most wonderful mines in the world. The *Courier* says it is turning out large quantities every month, that sell to the smelters at from $4.00 to $6,000 per ton, and has paid large dividends constantly from the very commencement. The first class ore, by the ton, assays $5,000 to $12,000; the second class, about $800; and the third class, $200. Pieces can be picked from any of the first class sacks that will yield from $1 to $3.50 per ounce, or at the rate of $30,000 to $100,000 per ton. The quantity and quality of the ore has gradually but constantly increased from the surface, and now at the depth of 220 feet the vein is fully twice as large as it was at the surface, and the ore is far richer. From what is already known of this remarkable vein, few will dispute the assertion that no mine thus far discovered has produced such extraordinary yields as the American at Sunshine. Its character under development proves it to be a true fissure, strong and exceedingly rich in precious metal. Its net returns at this time, and since the first ten feet of opening had been accomplished, have been and are greater than those of any other deposit of gold-bearing mineral in the country. Much of the crevice matter is worth from $10 to $40 per pound, and selected specimens have returned at the rate of $200 per ton. The Chicago *Inter-Ocean*, in speaking of this district, says: "But the latest mining sensation is the recent development in the Sunshine district of Boulder county. Tellurium has heretofore been found in only three localities in the world. It carries the richest deposit of gold. This species of ore is found in this district. Its yield is well nigh fabulous. The entire locality develops telluride ore, but among the discoveries the American mine has been worked to a demonstrable extent. The shaft is only down 220 feet, worked by a hoisting engine. The vein is 2 feet thick, of which a streak of 7 or 8 inches is pay ore. The first class of this is shipped to the Omaha Smelting Works, where the net sales average $5,050 per ton. To bring this price the ore has to assay $6,000 per ton, from which are deducted the freight charges, and $100 per ton for treatment; 90 per cent. of the balance is paid to the owner of the ore. The getting out, sorting, and handling of the ore cost, when laid down in Omaha, $100 per ton, freight inclusive. The mine employs 30 men, at a cost of $3,000 per month, who produce 20 tons of milling ore in that length of time. Of this ore there is shipped, as first class, to Omaha, 2 to 4 tons per month, and the balance to Professor Hill's works, at Black Hawk, as second class. The net profit of the mine is $40,000 per month. The present owners of the mine bought it, when partially developed, for $17,000. It cannot now be purchased at any price within reason.—*Miner's Journal.*

Preservation of Eggs.—According to the *Chronique de la Société d'Acclimation*, the German military authorities at Passau, Bavaria, are very much interested in some experiments to devise a means by which eggs can be preserved. It is claimed that the egg completely desiccated, with proper care, will lose nothing of its nutritive properties, and will simply present in an infinitely smaller volume the same quantity of alimentary matter as before the operation.

Mica and Graphite from the Arctic.—During the trip of the steamer Tigress in search of the Polaris expedition, Lieut. W. A. Mintzer, U.S.N., discovered some valuable deposits of mica and graphite along the shores of Cumberland Inlet. An expedition was fitted out last spring for the purpose of bringing home this treasure, under the command of Lieut. Mintzer, who had received leave of absence, and who was accompanied by Capt. Buddington and Esquimaux Joe, of Polaris fame. The expedition has lately returned with about fifteen tons of excellent mica and an unknown quantity of graphite.

Yerba de Fleche, Colliguaja, or Arrow-weed, is described by Capt. Polhamus, of Yuma, A. T., as a shrub from four to six feet high, branchy, and in the months of June and July yielding from three to five seeds from each pod. These seeds have each a little larva inside, which for several months give a peculiar jumping movement to it, especially when slightly warmed. The leaf of the plant is green during the whole season; is about half an inch long, and a quarter of an inch wide; the bark is ash-colored. By merely stirring coffee or any drink with a small branch of this shrub, it acts as an active cathartic. Taken in large doses it is an active poison.

The Paris Academy of Medicine has accepted the offer of a site in the old Luxembourg Gardens. The lecture-rooms, laboratory, fine library, unique museum of surgical instruments, and precious archives of this institution, which it inherits from the old Society of Medicine and Academy of Surgery, and which are almost a sealed book, will now find a fitting habitation. The Academy has been for the last fifty years provisionally located in a building of which it never could permanently have possession, and will now be properly lodged in the vicinity of all the learned societies of Paris.

The total imports of drugs, for the year 1876, were $496,000,000, while the total exports were $596,000,000, being a balance in our favor of $100,000,000.

New Galvanic Battery.—M. Leclanché has just constructed a new galvanic battery, which the *Annales Industrielles* thinks likely to render great service, both in manufactures and in scientific research. The original oxide of manganese battery by the same inventor consists of a porous jar filled with pyrolusite, in which is contained the carbon forming the positive pole. This jar is immersed in a solution of sal-ammoniac in contact with zinc. M. Leclanché has, however, introduced several improvements into this battery. He has superseded the porous jar by conglomerating the oxide of manganese, mixed in nearly equal parts with carbon, but with the addition of a small quantity—5 per cent. —of resin, for the purpose of giving consistency to the mass. These three substances, properly pulverized and intimately mixed, are conglomerated under a considerable pressure, and at a temperature of 100° Cent.=212° Fahr., into a solid cylinder, which serves at the same time as a porous diaphragm

and a positive electrode. But here a difficulty occurred. Under the influence of the current, an almost insoluble oxychlorate of zinc was formed, which was deposited in a crystalline form in the pores of the electrode, and considerably diminished its conductibility, so that the internal resistance of the battery increased very rapidly, occasioning considerable inconvenience, especially when used for telegraphic purposes. M. Leclanché has now got rid of the difficulty by inserting in the centre of the carbon and manganese electrode, while being moulded, a small cylinder of bisulphate of soda. This acid salt prevents the formation of the oxychlorate of zinc; and the battery preserves its regularity for more than a year without the necessity for renewing the water of the saline solution. It offers a much slighter resistance than other batteries, and gives out a considerable quantity of electricity. A single element of small size, presented by M. du Moncel to the Académie, immediately caused a platinum wire connecting its two poles to become red-hot.

Enormous Casks of Wine.—There were recently landed at the London docks two monstrous casks or "tonnels" of wine, which were put up and shipped from Spain and Portugal. One contained 638 gallons, or 3,828 bottles of sherry; the other 590 gallons, or 3,540 bottles of port.

Water and Grease-Proof Paper.—A new water and grease-proof paper is obtained by saturating paper with a liquid prepared by dissolving shellac at a moderate heat in a saturated solution of borax.

A Cement for fixing metal letters to glass windows may be made by taking copal varnish, 15; drying oil, 5; turpentine, 3; oil of turpentine, 2; and liquefied glue, 5 parts. Melt in a water-bath and add 10 parts of dry slaked lime.

Chloral Plaster.—Dr. Solari, of Marseilles, says the *Medical Examiner*, recommends the chloral plaster as an excellent application in cases of neuralgia, and of pains resulting from exposure to cold. The plaster is easily prepared by powdering the chloral over a common pitch plaster, one or two scruples of the chloral for every four square inches of plaster, care being taken not to incorporate the chloral with the pitch.

Phosphorus Pill.—In the *British Med. Jour.* of Nov. 11, p. 641, Mr. Wm. Martindale gives the following directions for making pills of phosphorus with the oil of theobroma, which he recommends to be used when patients cannot be got to take phosphorized almond oil. One *per cent.* of phosphorus may be combined in the following way: Having melted the oil contained in a wide-mouthed bottle placed in a water-bath, add the phosphorus, and, partly closing the mouth of the bottle, heat till this too melts and the temperature of the mixture becomes about 180° Fahr. Then cork it tightly, and with a little brisk agitation the phosphorus will dissolve almost immediately. Allow the fluid to cool and solidify; and having in this condition divided it into suitable lots for rolling, beat each in a mortar before applying it to the machine, and work off quickly. A three-grain pill will contain one thirty-third of a grain of phosphorus. They may be coated with a solution of sandrac in absolute alcohol in the following manner: Place the pills in a covered pot and pour upon them a few drops of the solution, agitate well and turn them out upon a slab, separate them from each other, and allow them to dry in the air.

Treatment of Acute Articular Rheumatism by Cyanide of Zinc.—This remedy, suggested some time since by Luten, of Rheims, has lately been employed with success by Deschamps, who recommends the following formula:

℞ Zinci cyanidi..... gr. $\frac{1}{12}$.
Pulv. acaciæ,
Sacch. lactis..... ãã q. s.
M. Ft. in pil. j.

To be taken to the number of ten in twenty-four hours.

Russian Medical Service.—On the 1st of January last the Russian army had 2,102 surgeons, 6,887 assistant surgeons, 173 veterinary surgeons, and 250 apothecaries; being a ratio of one surgeon to every 407 men, one assistant surgeon to every 161 men, and an apothecary to every 3,454 men.

Medicine in Burmah.—It appears that surgeons and surgical operations are unknown in Burmah; but physicians are divided into three orders: Those who use mineral or vegetable medicines; those who attribute all diseases to some derangement of the elements which constitute health, and trust chiefly to the effect of diet; and thirdly, the "witch-doctors," who proceed by spells and incantations. Fees range from eight annas to five rupees a visit; or sometimes the patient adopts the principle of payment for results, when a successful cure often brings a large reward.

Inferior Character of Troy Weights in Use.—The writer of an editorial article in the numbers of the *Medical Record* published during December, makes some astonishing statements regarding the character of the weights used by a few of our leading apothecaries in the dispensing of active medicines. We publish a few of them, and recommend our readers who are interested in this matter to read the balance of the articles in the *Medical Record*.

A set of German weights offered for sale by a prominent firm gave the following result:

Nominal Weight.	Actual Weight.
$\frac{1}{4}$ grain,	.35 grain.
$\frac{1}{2}$ "	.90 "
1 "	1.10 "
2 "	2. "

A set of American make, of seven pieces (cost 9 cents) had a $\frac{1}{2}$ grain piece which weighed .29 grains. An examination of the weights in actual use by an apothecary in this city showed this:

Nominal Weight.	Actual Weight.
3 grains.	2.75 grains.
4 "	2.73 "
5 "	3.80 "
6 "	4.43 "
480 "	458.85 "

At another store eight or nine small weights gave these comparisons:

Nominal Weight.	Actual Weight.
3 grains.	3.15 grains.
4 "	4.35 "
6 "	5.10 "

The writer of the article says:

"At this store we also found a small German saddle-scale, graduated from .1 to 5 gr., in which the arm carrying the saddle was .2 gr. lighter than it should have been; consequently, if half a grain of morphine had been ordered, .3 gr. only would have been furnished, or, if .3 gr. had been ordered, .1 gr. only would have been weighed. At a third store we found everything as it should be; but at a fourth the proprietor declined to permit us to examine his weights. He said that he knew they were all right, because he had used them for several years. The two shops we first visited, and in which the defective weights were found, are situated in prominent thoroughfares, and enjoy first-class patronage. These few examples are of course not conclusive, but they permit a fair inference that a large proportion of the prescription weights used in this country are inaccurate, and many of them seriously so. We have made inquiry of several apothecaries as to whether their weights were regularly examined by the Inspector of Weights. The uniform reply has been, that their avoirdupois weights were inspected, but that their prescription weights were not. We see, then, that if we buy a pound of bird-seed, there is every prospect of our getting accurate weight; but with strychnine or atropine the case may be very different. We have been further assured by an apothecary, that, in a prominent store in which he was once a clerk, there was not a balance in the establishment that would turn with less than three grains, and that it was the custom to *estimate* all smaller quantities. Another apothecary states that he knows of a store in which there are no Troy weights over half an ounce, all weighing above that amount being done with avoirdupois."

DR JOSEPH PRIESTLEY

BORN 1733, DIED 1804.